

10/630,666

(FILE 'HOME' ENTERED AT 17:06:17 ON 23 JUL 2005).

FILE 'REGISTRY' ENTERED AT 17:06:47 ON 23 JUL 2005

L1 STRUCTURE UPLOADED  
L2 50 S L1  
L3 1583 S L1 FULL

FILE 'CAPLUS' ENTERED AT 17:07:22 ON 23 JUL 2005

L4 1429 S L3  
L5 848 S L4 AND PY<2001

FILE 'REGISTRY' ENTERED AT 17:11:58 ON 23 JUL 2005

L6 STRUCTURE UPLOADED

=> d 16  
L6 HAS NO ANSWERS  
L6 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s 16  
SAMPLE SEARCH INITIATED 17:12:22 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 359 TO ITERATE

100.0% PROCESSED 359 ITERATIONS 50 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 6044 TO 8316  
PROJECTED ANSWERS: 1014 TO 2066

L7 50 SEA SSS SAM L6

=> s 16 full  
FULL SEARCH INITIATED 17:12:27 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 6774 TO ITERATE

100.0% PROCESSED 6774 ITERATIONS 1356 ANSWERS  
SEARCH TIME: 00.00.01

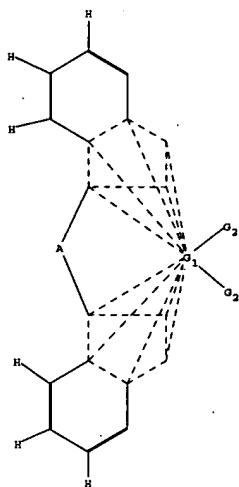
L8 1356 SEA SSS FUL L6

=>

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
ENTRY SESSION  
FULL ESTIMATED COST 161.33 328.36

FILE 'CAPLUS' ENTERED AT 17:12:35 ON 23 JUL 2005  
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FILE COVERS 1907 - 23 Jul 2005 VOL 143 ISS 5  
FILE LAST UPDATED: 22 Jul 2005 (20050722/ED)

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This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s l8 and py<2001  
1376 L8  
20650460 PY<2001  
L9 829 L8 AND PY<2001

=> d 1-100 bib abs

L9 ANSWER 1 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2004:117267 CAPLUS  
DN 140:147528  
TI Crosslinked olefin elastomer foam and elastomer composition therefor  
IN Sueda, Takanori; Yasaka, Naoto; Yoo, Chong-Sun; Yoon, Jeong-Sik; Choi,  
Kyung-Man; Lee, Kwon-Ik  
PA Mitsui Chemicals, Inc., Japan  
SO Eur. Pat. Appl., 40 pp.  
CODEN: EPXXDW

DT Patent  
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1388570	A2	20040211	EP 2003-23821	19991028
	EP 1388570	A3	20040324		
	R: DE, FR, GB, IT, NL				
	JP 2000198889	A2	20000718	JP 1999-92667	19990331 <--
	EP 997493	A1	20000503	EP 1999-120894	19991028 <--
	EP 997493	B1	20040714		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000344924	A2	20001212	JP 1999-310592	19991101 <--
	JP 2000344925	A2	20001212	JP 1999-310593	19991101 <--
	US 2003013778	A1	20030116	US 2001-986947	20011113
	US 6617366	B2	20030909		
	US 2003207952	A1	20031106	US 2003-454512	20030605
	US 2003207953	A1	20031106	US 2003-454614	20030605
PRAI	JP 1998-310603	A	19981030		
	JP 1998-310604	A	19981030		
	JP 1999-85491	A	19990329		
	JP 1999-92667	A	19990331		
	EP 1999-120894	A3	19991028		
	US 1999-428488	A1	19991028		
	US 2001-986947	A3	20011113		

AB A crosslinked olefin elastomer foam has a sp. gr. of 0.05 to 0.2, an  
expansion ratio of 8 to 15, a compression set of 30 to 60% and a tear  
strength of 1.5 to 2.5 kg/cm. The crosslinked foam is obtained by heating  
an elastomer composition comprising a specific ethylene/ $\alpha$ -olefin  
copolymer, an organic peroxide, a crosslinking auxiliary and a foaming agent.  
The crosslinked foam has a high expansion ratio, is free from surface  
roughening attributed to defoaming, realizes a soft touch, exhibits a low  
compression set and is excellent in mech. strength (particularly tear  
strength) and heat resistance.

L9 ANSWER 2 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2004:3633 CAPLUS  
DN 140:60160  
TI Stable catalysts and co-catalyst compositions formed from  
hydroxyaluminosiloxane  
IN Wu, Feng-jung; Bauch, Christopher G.; Simeral, Larry S.; Strickler, Jamie  
R.

PA USA  
 SO U.S. Pat. Appl. Publ., 42 pp., Cont.-in-part of U.S. Ser. No. 946,881.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 7

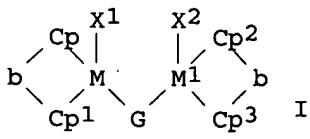
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 2004002420	A1	20040101	US 2003-379847	20030305
	US 6160145	A	20001212	US 1998-177736	19981023 <--
	US 6462212	B1	20021008	US 2000-655218	20000905
	US 2002132945	A1	20020919	US 2001-946881	20010905
	US 6812182	B2	20041102		
PRAI	US 1998-177736	A2	19981023		
	US 2000-655218	A2	20000905		
	US 2001-946881	A2	20010905		

AB Surprisingly stable olefin polymerization catalysts and co-catalysts are formed from metallocenes and hydroxyaluminoxanes. For example, a solid composition of matter is formed from a hydroxyaluminoxane and a treating agent, in which the rate of OH-decay for the solid composition is reduced as compared to that of the hydroxyaluminoxane. Gelatinous compns. of matter formed from hydroxyaluminoxane and having similar stability characteristics are also disclosed. Processes for converting a hydroxyaluminoxane into a such compns. of matter, supported catalysts formed from such co-catalyst compns. of matter, as well as methods of their use, are described.

L9 ANSWER 3 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:297646 CAPLUS  
 DN 138:321724  
 TI bridged bimetallic or trimetallic metallocene catalysts for olefin polymerization  
 IN Lyu, Yi-Yeol; Chang, Seok; Yoon, Keun-byoung; Jung, Won-Cheol  
 PA Samsung General Chemicals Co., Ltd., S. Korea  
 SO Eur. Pat. Appl., 20 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----					
PI	EP 1302483	A2	20030416	EP 2002-28086	19990908
	R: CH, DE, FR, GB, IT, LI, SE				
	KR 2000025587	A	20000506	KR 1998-42729	19981013 <--
	EP 994132	A1	20000419	EP 1999-117715	19990908 <--
	EP 994132	B1	20040804		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	KR 1998-42729	A	19981013		
	EP 1999-117715	A3	19990908		

OS MARPAT 138:321724  
 GI

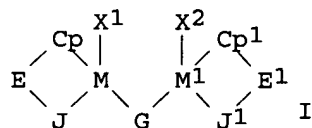


AB A metallocene catalyst for olefin polymerization having the formula I was prepared by reacting a metallocene precursor with a compound having at least two functional groups, where M and M1 are transition metals from Group IV-VI elements, Cp, Cp1, Cp2 and Cp3 are cyclopentadienyl-typed ligands which form η5-bond to M or M1, b is an alkylene group of C1-4, dialkylsilyl, dialkylgermanium, alkylphosphine or alkylamine, G is the linking groups and represented as -YRY1-, where Y and Y1 = O, NR1 or PR2, and R, R1, R2 = a linear or branched divalent alkyl, cycloalkyl, aryl or arylalkyl groups

having  $\leq 20$  carbons. The metallocene catalysts are activated with a co-catalyst, such as MAO or a non-coordinated lewis acid as  $B(C_6F_5)_3$ , to produce polyolefins having enhanced phys. properties in comparison with the conventional metallocenes or Ziegler-Natta catalysts.

L9 ANSWER 4 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:297645 CAPLUS  
 DN 138:321723  
 TI Bridged multimetallic metallocene catalysts for olefin polymerization  
 IN Lyu, Yi-Yeol; Chang, Seok; Yoon, Keun-Byoung; Jung, Won-Cheol  
 PA Samsung General Chemicals Co., Ltd., S. Korea  
 SO Eur. Pat. Appl., 19 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1302482	A2	20030416	EP 2002-28085	19990908
	R: CH, DE, FR, GB, IT, LI, SE				
	KR 2000025587	A	20000506	KR 1998-42729	19981013 <--
	EP 994132	A1	20000419	EP 1999-117715	19990908 <--
	EP 994132	B1	20040804		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	KR 1998-42729	A	19981013		
	EP 1999-117715	A3	19990908		
OS	MARPAT 138:321723				
GI					



AB A metallocene catalyst for olefin polymerization having the formula I was prepared by reacting a metallocene precursor with a compound having at least two functional groups, where M and M1 are transition metals from Group IV-VI elements, Cp and Cp1 are cyclopentadienyl-typed ligands which form  $\eta^5$ -bond to M or M1, E and E1 are O, B, C1-4 alkyl, dialkylsilyl and dialkylgermanium, J and J1 are S, alkylphosphine or alkylamine, X and X1 are H, OH, halogen, and alkyl, cycloalkyl, aryl or arylalkyl groups having  $\leq 20$  carbons, G is a linking group and represented as -YRY1-, where Y and Y1 = O, NR1 or PR2, and R, R1, R2 = a linear or branched divalent alkyl, cycloalkyl, aryl or arylalkyl groups having  $\leq 20$  carbons. The metallocene catalysts are activated with a co-catalyst, such as MAO or a non-coordinated lewis acid as  $B(C_6F_5)_3$ , to produce polyolefins having enhanced phys. properties in comparison with the conventional metallocenes or Ziegler-Natta catalysts.

L9 ANSWER 5 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:297644 CAPLUS  
 DN 138:304699  
 TI Bridged bimetallic or trimetallic metallocene catalysts for olefin polymerization  
 IN Lyu, Yi-Yeol; Chang, Seok; Yoon, Keun-Byoung; Jung, Won-Cheol  
 PA Samsung General Chemicals Co., Ltd., S. Korea  
 SO Eur. Pat. Appl., 15 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1302481	A2	20030416	EP 2002-28084	19990908

R: CH, DE, FR, GB, IT, LI, SE  
KR 2000025587 A 20000506 KR 1998-42729 19981013 <--  
EP 994132 A1 20000419 EP 1999-117715 19990908 <--  
EP 994132 B1 20040804  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO  
PRAI KR 1998-42729 A 19981013  
EP 1999-117715 A3 19990908  
OS MARPAT 138:304699  
AB A metallocene catalyst for olefin polymerization having the formula  
CpCp1M(μ-G)(μ-G1)M1Cp2Cp3 was prepared by reacting a metallocene  
precursor with a compound having at least two functional groups, where M and  
M1 are transition metals from Group IV-VI elements, Cp, Cp1, Cp2 and Cp3  
are cyclopentadienyl-typed ligands which form η<sup>5</sup>-bond to M or M1, G  
and G1 are the linking groups and represented as -YRY1-, where Y and Y1 =  
O, NR1 or PR2, and R, R1, R2 = a linear or branched divalent alkyl,  
cycloalkyl, aryl or arylalkyl groups having ≤20 carbons. The  
metallocene catalysts are activated with a co-catalyst, such as MAO or a  
non-coordinated lewis acid as B(C6F5)3, to produce polyolefins having  
enhanced phys. properties in comparison with the conventional metallocenes  
or Ziegler-Natta catalysts.

L9 ANSWER 6 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:790259 CAPLUS  
DN 137:295097  
TI Preparation of 2-aryl-7-haloindenes and their coupling reactions with aryl  
Grignard reagents to give metallocene catalyst ligands  
IN Sullivan, Jeffrey M.; Barnes, Hamlin H.  
PA Boulder Scientific Company, USA  
SO U.S., 12 pp., Cont.-in-part of U.S. 5,789,634.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6465700	B1	20021015	US 1998-127796	19980803
	US 5789634	A	19980804	US 1997-795019	19970205 <--
	CA 2305363	AA	20000217	CA 1999-2305363	19990803 <--
	WO 2000007968	A1	20000217	WO 1999-US17519	19990803 <--
	W: AU, CA, JP, NZ, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9953324	A1	20000228	AU 1999-53324	19990803 <--
	AU 764843	B2	20030904		
	EP 1027314	A1	20000816	EP 1999-938949	19990803 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	NZ 503655	A	20010928	NZ 1999-503655	19990803
	JP 2002522405	T2	20020723	JP 2000-563603	19990803
PRAI	US 1997-795019	A2	19970205		
	US 1998-127796	A	19980803		
	WO 1999-US17519	W	19990803		
OS	CASREACT 137:295097				
AB	2-Aryl-7-haloindenes were prepared and coupled with aryl Grignard reagents. The compds. can then be converted into ansa-metallocene α-olefin polymerization catalysts (no data). For example, 2-phenyl-7-chloroindene (synthetic preparation given) undergoes coupling reaction with phenylmagnesium bromide to give 2,7-diphenylindene, which can be reacted with dimethyldichlorosilane and ZrCl4 to yield the corresponding ansa-metallocene complex.				

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 7 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:790213 CAPLUS  
DN 137:311354  
TI Biscyclopentadienyl diene complex catalysts for polymerization of olefins  
IN Timmers, Francis J.; Stevens, James C.; Devore, David D.; Rosen, Robert

PA K.; Patton, Jasson T.; Neithamer, David R.  
SO The Dow Chemical Company, USA  
U.S., 21 pp., Cont.-in-part of U.S. Ser. No. 284,925, abandoned.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6465384	B1	20021015	US 1995-481791	19950607
	US 5527929	A	19960618	US 1995-482135	19950607 <--
	US 5616664	A	19970401	US 1995-474046	19950607 <--
	US 5972822	A	19991026	US 1995-474224	19950607 <--
	CA 2195789	AA	19960215	CA 1995-2195789	19950714 <--
	WO 9604290	A1	19960215	WO 1995-US8813	19950714 <--
	W: AU, BR, CA, CN, CZ, FI, HU, JP, KR, MX, NO, NZ, PL, RO, RU, SG, SK, UA, UZ				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9530090	A1	19960304	AU 1995-30090	19950714 <--
	AU 693578	B2	19980702		
	EP 775148	A1	19970528	EP 1995-926280	19950714 <--
	EP 775148	B1	19990825		
	EP 775148	B2	20030102		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	CN 1156997	A	19970813	CN 1995-194917	19950714 <--
	CN 1058015	B	20001101		
	BR 9508889	A	19970930	BR 1995-8889	19950714 <--
	JP 10503517	T2	19980331	JP 1996-506526	19950714 <--
	HU 77589	A2	19980629	HU 1997-304	19950714 <--
	EP 915098	A2	19990512	EP 1999-100041	19950714 <--
	EP 915098	A3	20000802		
	EP 915098	B1	20021106		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
	RU 2135508	C1	19990827	RU 1997-103146	19950714 <--
	AT 183748	E	19990915	AT 1995-926280	19950714 <--
	ES 2137532	T3	19991216	ES 1995-926280	19950714 <--
	AT 227300	E	20021115	AT 1999-100041	19950714
	PL 184500	B1	20021129	PL 1995-318434	19950714
	ES 2182403	T3	20030301	ES 1999-100041	19950714
	IL 114790	A1	20020523	IL 1995-114790	19950731
	TW 449604	B	20010811	TW 1995-84108010	19950801
	ZA 9506447	A	19970203	ZA 1995-6447	19950802 <--
	FI 9700429	A	19970131	FI 1997-429	19970131 <--
	NO 9700441	A	19970326	NO 1997-441	19970131 <--
	CN 1260350	A	20000719	CN 1999-126902	19991224 <--
	CN 1263894	A	20000823	CN 1999-126901	19991224 <--
PRAI	US 1994-284925	B2	19940802		
	US 1995-481791	A3	19950607		
	EP 1995-926280	A3	19950714		
	WO 1995-US8813	W	19950714		

OS MARPAT 137:311354

AB Biscyclopentadienyl, Group 4 transition metal complexes formed with conjugated dienes wherein the diene is bound to the transition metal either in the form of a  $\sigma$ -complex or a  $\pi$ -complex in combination with strong Lewis acids, Bronsted acid salts, carbenium ion salts, salts containing a cationic oxidizing agent, or subjected to bulk electrolysis in the presence of compatible, inert non-coordinating anions form catalysts for polymerizing olefins, diolefins and/or acetylenically unsatd. monomers. Isotactic polypropylene was prepared using rac-1,2-[bis-(1-indenyl)ethanediyl]zirconium s-trans( $\eta^4$ -1,4-trans-trans-diphenyl-1,3-butadiene) with B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub> activator.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 8 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:770153 CAPLUS  
DN 137:279617

TI Highly active and stable catalyst system containing metallocenes and hydroxyaluminoxanes with low Al/M ratio and its use for olefin

polymerization  
IN Wu, Feng-Jung  
PA Albemarle Corporation, USA  
SO U.S., 23 pp., Cont.-in-part of U.S. 6,160,145.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6462212	B1	20021008	US 2000-655218	20000905
	US 6160145	A	20001212	US 1998-177736	19981023 <--
	CA 2419955	AA	20020314	CA 2001-2419955	20010905
	WO 2002020156	A2	20020314	WO 2001-US27449	20010905
	WO 2002020156	A3	20020919		
	W: CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	US 2002072578	A1	20020613	US 2001-946976	20010905
	US 6492292	B2	20021210		
	US 2002086957	A1	20020704	US 2001-946880	20010905
	US 6555494	B2	20030429		
	US 2002132945	A1	20020919	US 2001-946881	20010905
	US 6812182	B2	20041102		
	EP 1361922	A2	20031119	EP 2001-968473	20010905
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004517161	T2	20040610	JP 2002-524626	20010905
	US 6562991	B1	20030513	US 2002-170166	20020611
	US 2004002420	A1	20040101	US 2003-379847	20030305
PRAI	US 1998-177736	A2	19981023		
	US 2000-655218	A	20000905		
	US 2001-946881	A2	20010905		
	US 2001-946976	A3	20010905		
	WO 2001-US27449	W	20010905		

AB A highly effective aluminosilane cocatalyst for olefin polymerization was prepared by hydrolysis of triisobutylaluminum with equivalent of water, and the resulted aluminosilane contains high percentage of OH group. The hydroxyaluminosilane was used to activate Group IV metallocenes, such as rac-dimethylsilylbis(2-methylindenyl)zirconium di-Me, and functionalized as a Brosted acid. The catalyst composition containing metallocene and hydroxyaluminosilane has a very low Al/Zr ratio, e.g., 21, and thus consumes less amount of expensive aluminosilane, while remains extremely high catalytic activity. The catalyst compns. are more stable in the solid state than in solution and thus can be stored, shipped, and used under inert anhydrous conditions as performed catalysts.

RE.CNT 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 9 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:717088 CAPLUS  
DN 137:233071  
TI Compositions formed from hydroxyaluminosilane and their use as catalyst components  
IN Wu, Feng-Jung; Bauch, Christopher G.; Simeral, Larry S.; Strickler, Jamie R.  
PA Albemarle Corporation, USA  
SO U.S. Pat. Appl. Publ., 39 pp., Cont.-in-part of U.S. Ser. No. 655,218.  
CODEN: USXXCO

DT Patent  
LA English  
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002132945	A1	20020919	US 2001-946881	20010905
	US 6812182	B2	20041102		
	US 6160145	A	20001212	US 1998-177736	19981023 <--
	US 6462212	B1	20021008	US 2000-655218	20000905
	US 2004002420	A1	20040101	US 2003-379847	20030305



PRAI US 1998-177736 A2 19981023  
 US 2000-655218 A2 20000905  
 US 2001-946881 A2 20010905

AB A composition in the form of one or more individual solids is formed from components comprised of (i) a hydroxyaluminumoxane and (ii) a carrier material compatible with the hydroxyaluminumoxane and in the form of one or more individual solids. Olefin polymerization co-catalysts formed from the hydroxyaluminumoxanes have good stability. Propylene was polymerized in the presence of hydroxy iso-Bu aluminumoxane and rac-dimethylsilylenebis(2-methylindenyl)zirconium di-Me catalysts.

RE.CNT 74 THERE ARE 74 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 10 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:609959 CAPLUS

DN 137:169983

TI Production of branched polyolefins using multi-component catalyst system containing cobalt- or iron-bis(iminomethyl)pyridine complexes and metallocenes

IN Bennett, Alison Margaret Anne

PA E. I. Du Pont de Nemours & Co., USA

SO U.S., 15 pp., Cont.-in-part of U.S. 6,214,761.

CODEN: USXXAM

DT Patent

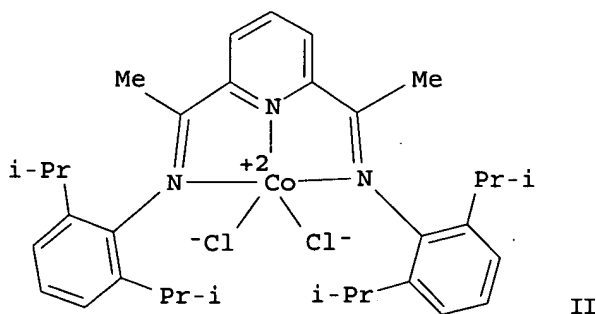
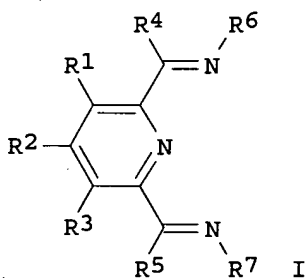
LA English

FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6432862	B1	20020813	US 2000-729120	20001204
	US 5955555	A	19990921	US 1997-991372	19971216 <--
	EP 1127897	A2	20010829	EP 2001-200886	19971216
	EP 1127897	A3	20040102		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
	JP 2002302510	A2	20021018	JP 2002-15649	19971216
	US 6214761	B1	20010410	US 1999-273409	19990322
PRAI	US 1996-33656P	P	19961217		
	US 1997-991372	A2	19971216		
	US 1999-273409	A2	19990322		
	EP 1997-953340	A3	19971216		
	JP 1998-528000	A3	19971216		

OS MARPAT 137:169983

GI



AB A process for the production of polyolefins with varied and useful properties, e.g., branching, mol. weight, mol. weight distribution, crystallinity and glass transition temperature, comprises polymerizing olefins, e.g., ethylene or propylene, using  $\geq 2$  distinct polymerization catalysts containing (a) a first active catalyst of an Fe or Co complex of ligand I, where R1-R5 = H or alkyl, R6 and R7 = aryl or substituted aryl, (b) a second active catalyst containing  $\geq 1$  transition metals, e.g., metallocenes. Thus, ethylene was polymerized in the presence of a mixture of  $2.3 \times 10^{-6}$  mol catalyst II and  $3.0 \times 10^{-6}$  mol constrained geometry catalyst dimethylsilyl(t-

butylamido)(tetramethylcyclopentadienyl)titanium dichloride and MAO to yield polyethylene with 45 branched Me groups per 100 CH<sub>2</sub>, m.p. 117, 98 and 84° and Mn 65,000, while with only catalyst II used, the polyethylene has only 4 branched Me groups per 100 CH<sub>2</sub>, m.p. 132° and Mn 11,700.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 11 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:505428 CAPLUS  
DN 137:63633  
TI Transition metal compounds having conjugate aluminoxate anions, their preparation, and use as olefin polymerization catalysts  
IN Wu, Feng-Jung; Strickler, Jamie R.  
PA USA  
SO U.S. Pat. Appl. Publ., 35 pp., Cont.-in-part of U.S. Ser. No. 655,218.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002086957	A1	20020704	US 2001-946880	20010905
	US 6555494	B2	20030429		
	US 6160145	A	20001212	US 1998-177736	19981023 <--
	US 6462212	B1	20021008	US 2000-655218	20000905
PRAI	US 1998-177736	A2	19981023		
	US 2000-655218	A2	20000905		

AB A low cost co-catalyst can be employed at very low Al loadings. Such compds. are composed of a cation derived from d-block or f-block metal compound, such as a metallocene, by loss of a leaving group, and an aluminoxate anion derived by transfer of a proton from a stable or metastable (supported) hydroxy aluminoxane to the leaving group. These catalyst compns. have extremely high catalytic activity, typically have high solubility in paraffinic solvents, and yield reduced levels of ash. Surprisingly, when isolated and stored, and optionally purified, under anhydrous inert conditions and surroundings, the catalyst compds. are more stable than if kept in solution. These catalyst compds. can be stored, shipped, and used under inert anhydrous conditions as preformed catalysts.

L9 ANSWER 12 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:450350 CAPLUS  
DN 137:20772  
TI Gelatinous compositions formed from hydroxyaluminoxane, solid compositions,, and use as catalyst components for olefin polymerization  
IN Wu, Feng-jung; Simeral, Larry S.  
PA USA  
SO U.S. Pat. Appl. Publ., 34 pp., Cont.-in-part of U.S. Ser. No. 655,218.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 7

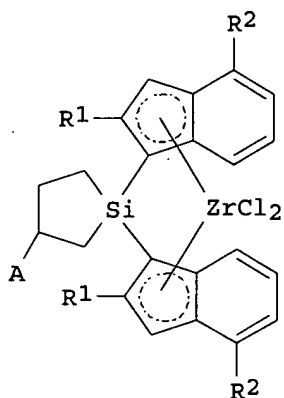
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002072578	A1	20020613	US 2001-946976	20010905
	US 6492292	B2	20021210		
	US 6160145	A	20001212	US 1998-177736	19981023 <--
	US 6462212	B1	20021008	US 2000-655218	20000905
	US 6562991	B1	20030513	US 2002-170166	20020611
PRAI	US 1998-177736	A2	19981023		
	US 2000-655218	A2	20000905		
	US 2001-946976	A3	20010905		

AB Gelatinous compns. are useful as polymerization catalyst components and are highly stable in terms of OH-decay rate. A treating agent such as water is useful to prepare the gel.

L9 ANSWER 13 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:421732 CAPLUS  
DN 136:386261

TI Ansa-zirconocenes functionalized on their cyclosilane bridges, their  
preparation and activity as polymerization catalysts  
IN Lemenovskii, D. A.; Krut'ko, D. P.; Borzov, M. V.; Brusova, G. P.;  
Veksler, E. N.; Nedorezova, P. M.; Tsvetkova, V. I.  
PA Institut Khimicheskoi Fiziki RAN im. N. N. Semenova, Russia  
SO Russ., No pp. given  
CODEN: RUXXE7  
DT Patent  
LA Russian  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2160277	C1	20001210	RU 1999-113532	19990621 <---
PRAI	RU 1999-113532		19990621		
OS	CASREACT 136:386261; MARPAT 136:386261				
GI					



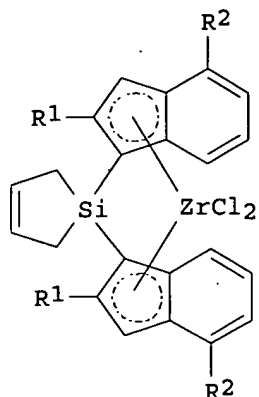
I

AB Ansa-zirconocenes functionalized on their cyclosilane bridges I [R1 = H, Me, Et; R2 = H, (un)branched C1-4 alkyl, aryl; A = BC8H14, MR3; M = Sn, Si; R = (un)branched C1-4 alkyl, aryl], useful as catalysts for preparation of polyolefins, are claimed. Also claimed is a method for preparation of I comprising synthesizing substituted indene, preparing the Li salt of the indene and reaction of the latter with 1,1-dichloro-2,5-dihydrosilole in Et2O and subsequently treating the resulting dilithium salt of the corresponding Si-bridged bis-indenyl ligand with ZrCl4 to give the corresponding zirconocene and heating it in THF with an alkyl(aryl)derivative of B monohydride, Sn or Si. This method makes it possible to obtain high yields of intermediates and desired products and permits increasing content of active racemic form in metallic complex. The resulting compds. have high catalytic activity and stereoselectivity in the polymerization of propylene. In an example, reaction of indenyllithium with 1,1-dichloro-2,5-dihydrosilole gave the bis(indenyl)silole bidentate ligand which formed a dilithium salt-Et2O adduct upon treatment with BuLi in Et2O, and complexation of the latter with ZrCl4 in PhMe and subsequent functionalization with 9-BBN in THF gave I (R1 = R2 = H, AH = 9-BBN), and its catalytic activity for polymerization of propylene was demonstrated.

L9 ANSWER 14 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2002:416502 CAPLUS  
DN 136:386260

TI Ansa-zirconocenes with an unsaturated cyclosilane bridge, their  
preparation and activity as polymerization catalysts  
IN Lemenovskii, D. A.; Avtomonov, E. V.; Krut'ko, D. P.; Borzov, M. V.;  
Kazennova, N. B.; Tsvetkova, V. I.; Nedorezova, P. M.; Aladyshev, A. M.;  
Savinov, D. V.  
PA Institut Khimicheskoi Fiziki im. N. N. Semenova RAN, Russia  
SO Russ., No pp. given  
CODEN: RUXXE7  
DT Patent  
LA Russian  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2160276	C1	20001210	RU 1999-113531	19990621 <--
PRAI	RU 1999-113531		19990621		
OS	CASREACT 136:386260; MARPAT 136:386260				
GI					



I

AB Ansa-zirconocenes having an unsatd. cyclosilane bridge I (R1 = H, Me, Et; R2 = H, (un)branched C1-4 alkyl, aryl), useful as polymerization catalysts for polyolefin preparation, are claimed. Also claimed is a method for preparation of I by reaction of a lithium derivative of indene with 1,1-dichloro-2,5-dihydrosilole in Et2O to give a bis-indenyl ligand having a cyclosilane bridge; subsequent dilithiation of the bis-indenyl ligand thus obtained affords a salt which exists as a crystalline adduct of Et2O, which upon treatment with ZrCl4 affords the desired product with high yield. Comps.. I have high catalytic activity and stereoselectivity in polymerization reactions as mixts. of rac (active) and meso (inactive) forms. In an example, lithiation of 2-ethyl-4-phenylindene (preparation given) with BuLi and subsequent silylation with 1,1-dichloro-2,5-dihydrosilole gave nearly quant. the bidentate ligand 1,1-bis(2-ethyl-4-phenyl-1-yl)-2,5-dihydrosilole which formed 70% of a crystalline salt-Et2O adduct upon dilithiation; treating the latter with ZrCl4 in PhMe gave 67% I (R1 = Et, R2 = Ph) as a 2:1 mixture of rac and meso isomers, and these demonstrated improved catalytic activity in the polymerization of propylene over known zirconocene catalysts.

L9 ANSWER 15 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2002:296830 CAPLUS  
 DN 136:295226

TI Manufacturing of stereoregular polypropylene using zirconocene catalysts  
 IN Nedorezova, P. M.; Tsvetkova, V. I.; Aladyshev, A. M.; Savinov, D. V.; Klyamkina, A. N.; Lemenovskii, D. A.; Brusova, G. P.; Veksler, E. N.  
 PA Institut Khimicheskoi Fiziki im. N. N. Semanova RAN, Russia  
 SO Russ., No pp. given  
 CODEN: RUXXE7

DT Patent  
 LA Russian

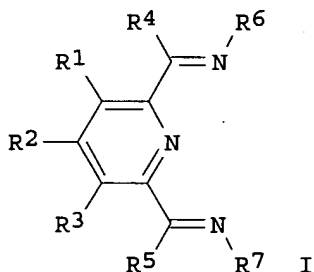
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2154070	C1	20000810	RU 1999-113559	19990621 <--
PRAI	RU 1999-113559		19990621		

AB Manufacturing of stereoregular polypropylene and ethylene-propylene copolymers using zirconocene catalysts is described. The process includes a pre-polymerization stage carried out at low temps. (5-12°), which was found to significantly prolong high activity of the catalysts at higher polymerization temps. Thus, isotactic polypropylene is prepared by bulk polymerization of propylene using a zirconocene of bisindenyl-type with C2-symmetry in the presence of methylaluminoxane. The polymerization is carried out for 5-7 min at 5-12° and then for 30-75 min at 50-70°.

L9 ANSWER 16 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2002:90636 CAPLUS  
 DN 136:118867  
 TI Oligomerization of ethylene catalyzed by cobalt- or iron-  
 bis(iminomethyl)pyridine complexes and metallocene catalysts  
 IN Bennett, Alison Margaret Anne  
 PA USA  
 SO U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. 6,214,761.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002013431	A1	20020131	US 2000-729286	20001204
	US 6417305	B2	20020709		
	US 5955555	A	19990921	US 1997-991372	19971216 <--
	EP 1127897	A2	20010829	EP 2001-200886	19971216
	EP 1127897	A3	20040102		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
	JP 2002302510	A2	20021018	JP 2002-15649	19971216
	US 6214761	B1	20010410	US 1999-273409	19990322
PRAI	US 1996-33656P	P	19961217		
	US 1997-991372	A2	19971216		
	US 1999-273409	A2	19990322		
	EP 1997-953340	A3	19971216		
	JP 1998-528000	A3	19971216		
OS	MARPAT 136:118867				
GI					



AB Ethylene was oligomerized in the presence of catalysts based on Fe(II) and  
 Co(II) complexes of bisiminomethylpyridine tridentate ligands or  
 metallocene catalysts of Ti(IV) or Zr(IV). Thus, ethylene was  
 oligomerized in the presence of 130 mmol catalyst I and MAO at  
 80-120° for 36 min to yield 30 g polyethylene with m.p.  
 119°, Mn 68,000 and PDI 2.5.

L9 ANSWER 17 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:875258 CAPLUS  
 DN 136:6547  
 TI Furyl- or thienyl-substituted bridged ansa metallocene catalysts for  
 olefin polymerization  
 IN Mitani, Seiki; Nakano, Masato; Saito, Jun; Yamazaki, Hiroshi; Kimura,  
 Keisuke  
 PA Chisso Corporation, Japan  
 SO U.S., 40 pp., Cont.-in-part of U.S. 6,169,051.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6326493	B1	20011204	US 1999-449638	19991130

US 6169051 B1 20010102 US 1999-236322 19990125  
WO 2000043406 A1 20000727 WO 2000-JP287 20000121 <--

W: CN, JP, KR

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
PT, SE

EP 1066300 A1 20010110 EP 2000-900864 20000121

EP 1066300 B1 20030820

R: BE, DE, FR

JP 2002535339 T2 20021022 JP 2000-594822 20000121

JP 3674509 B2 20050720

PRAI US 1999-236322 A2 19990125

US 1999-449638 A 19991130

WO 2000-JP287 W 20000121

OS MARPAT 136:6547

AB A series of dimethylsilyl-bridged biscyclopentadienyl or bisindenyl group  
IV metal complexes with furyl- or thienyl- substituents on the rings were  
synthesized and used as catalysts for the polymerization of olefins, particularly  
achieving a very high effect in making high-mol.-weight polypropylene. Thus,  
propylene was polymerized in the presence of 0.62x10<sup>-3</sup> mmol  
rac-dimethylsilylenebis[2-(2-furyl)-3,5-dimethylcyclopentadienyl]zirconium  
dichloride and methylaluminoxane at 30° for 1 h to yield 42.7 g of  
polypropylene having Mw 4.83x10<sup>5</sup> and Mww/Mn 1.91.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 18 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:869039 CAPLUS

DN 136:6556

TI Linear copolymers of  $\alpha$ -olefins and divinylbenzene and graft  
copolymers having narrow molecular weight distributions

IN Chung, Tze-chiang; Dong, Jin Yong

PA The Penn State Research Foundation, USA

SO U.S. Pat. Appl. Publ., 27 pp., Cont.-in-part of U.S. 6,096,849.  
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001047069	A1	20011129	US 2001-810440	20010319
	US 6414102	B2	20020702		
	US 6096849	A	20000801	US 1999-359345	19990721 <--
	US 6265493	B1	20010724	US 2000-573737	20000518
PRAI	US 1999-359345	A2	19990721		
	US 2000-573737	A2	20000518		

OS MARPAT 136:6556

AB A linear, homogeneous copolymer was produced by copolymn. of  
 $\alpha$ -olefins and divinylbenzene using metallocene catalysts, and the  
resulting polyolefin was used to produce graft copolymers containing  
polyolefin backbone and pendant polymer side chains by both radical and  
anionic living polymerization reactions. Thus, 0.85 g a divinylbenzene-ethylene-  
1-octene terpolymer was lithiated with 0.6 mmol sec-BuLi and subsequently  
reacted with styrene at ambient temperature for 1 h to give a graft copolymer  
with 19 graft/1000 C and graft length 1690 g/mol.

L9 ANSWER 19 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:833863 CAPLUS

DN 135:372160

TI Process for manufacturing polyethylene with a functional end group in the  
presence of metallocene catalyst

IN Shin, Dong Geun; Byun, Doo Jin; Kim, Sang Youl

PA S. Korea

SO U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

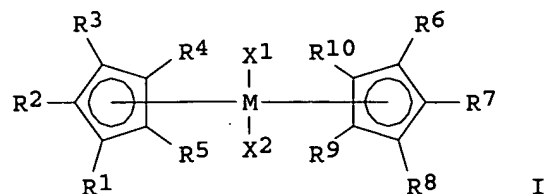
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 2001041779 A1 20011115 US 1999-340054 19990628  
 KR 2000020268 A 20000415 KR 1998-38798 19980918 <--  
 PRAI KR 1998-38798 A 19980918  
 OS MARPAT 135:372160  
 GI



AB Polyethylene with a functional end group can be manufactured in such a manner that a highly reactive functional group of alkyl-aluminum is easily introduced to the end of polymer via a selective chain transfer reaction in the presence of (1) metallocene catalyst represented by the following formula I and (2) a cocatalyst containing alkyl-aluminum compound or organic borate compound as active ingredient.

L9 ANSWER 20 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:809105 CAPLUS  
 DN 135:344903  
 TI Stereorigid bis-fluorenyl metallocene polymerization catalysts  
 IN Reddy, Baireddy R.  
 PA Fina Technology, Inc., USA  
 SO U.S., 11 pp., Cont.-in-part of U.S. 5,945,365.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6313242	B1	20011106	US 1999-386261	19990831
	US 5945365	A	19990831	US 1996-651839	19960520 <--
PRAI	US 1996-651839	A2	19960520		
OS	MARPAT 135:344903				

AB The title metallocene catalyst components have bis-fluorenyl ligands of a staggered conformation and are used for the isotactic propagation of a polymer chain from ethylenically unsatd. monomers. The catalyst components comprise bridged bis-fluorenyl metallocenes characterized by the following formula: X(FlYa)(Fl'Zb)MeQn(1) wherein, Fl and Fl' are fluorenyl groups which are interconnected by a structural bridge X to impart stereorigidity to the metallocene ligand, Me is a Group 3, 4, or 5 transition metal each Y is the same or different and is a hydrocarbyl or heterohydrocarbyl substituent at a distal position on the fluorenyl group, each Z is the same or different and is a hydrocarbyl or heterohydrocarbyl substituent at a distal position on the other fluorenyl group Fl', and a and b are each independently 1 or 2. The relative locations of Y and Z on their resp. fluorenyl groups are such that each is in a staggered position relative to a plane of symmetry through the ligand structure which contains the structural bridge. The substituent groups Y and Z are on opposed sides of this plane of symmetry to provide a staggered conformation to the ligand. One of the substituents Y and Z may take a form of a heterohydrocarbyl group with the other a hydrocarbyl group. Z may be a hydrocarbyl group and Y a heterohydrocarbyl group, specifically an alkyl and alkoxy group such as an oxymethyl group, or an amino group such as a dimethylamino group. Y and Z may be the same. A catalyst was prepared from di-Me bis(4-methoxyfluorenyl)silane and zirconium tetrachloride, and was used with MAO to polymerize propylene.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 21 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:700071 CAPLUS

DN 136:217114  
TI Metallocene based branch-block copolymers  
AU Markel, Eric J.; Weng, Weiqing; Peacock, Andrew J.; Dekmezian, Armenag H.  
CS Baytown Polymers Center, Exxon Chemical Company, Baytown, TX, 77522, USA  
SO Polyolefins 2000, International Conference on Polyolefins, Houston, TX,  
United States, Feb. 27-Mar. 1, 2000 (2000), 309-319 Publisher:  
Society of Plastics Engineers, Brookfield, Conn.  
CODEN: 69BVJC  
DT Conference  
LA English  
AB Polyethylene macromers having .apprx. 90% vinyl chain ends were copolymerized into different amorphous backbones using metallocene catalyzed solution polymerization. The resulting branch-block copolymers showed good thermoplastic elastomeric properties which can be made via mixed metallocene results. Production of block-graft copolymers involved the synthesis of vinyl-terminated macromers and their incorporation into polymer backbones. The resulting materials can be controlled systematically varying the polymer design in terms of branch and backbone composition and length, and branching concentration. The rheol. characteristics of long chain branch-block copolymers were likely to be superior to their linear counterparts. The incorporation of macromers into polymeric backbones has the potential for creating hard elastic materials, impact resistant copolymers and various other materials that could be used as compatibilizers in immiscible blends.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 22 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:700069 CAPLUS  
DN 136:217090  
TI Mechanistic studies on the formation of long-chain branching in polyethylene  
AU Reinking, Mark K.; Orf, Gene; McFaddin, Douglas  
CS Equistar Technology Center, Equistar Chemicals, LP, Cincinnati, OH, 45249, USA  
SO Polyolefins 2000, International Conference on Polyolefins, Houston, TX, United States, Feb. 27-Mar. 1, 2000 (2000), 259-267 Publisher: Society of Plastics Engineers, Brookfield, Conn.  
CODEN: 69BVJC  
DT Conference  
LA English  
AB Long-chain branching (LCB) can significantly improve the processability of polyethylene (PE). LCB is well known in LDPE, which is produced by radical polymerization process. In addition, LCB has been found in PE produced by vanadium, chromium, and metallocene-based catalyst systems. Understanding how LCB is produced in PE made with transition metal catalysts is an area of significant interest because of the polymer processability enhancements it offers. Reincorporation of a vinyl unsatd. polymer chain has been thought to be the only mechanism to produce LCB. A vanadium-based polymerization catalyst was discovered which produces PE with LCB and the polymer contains very little vinyl unsatn. Because of the lack of vinyl unsatn. and low comonomer incorporation rates displayed by this catalyst, a new mechanism is needed to explain the formation of LCB in this catalyst system. We propose a new mechanism for producing LCB in PE which involves breaking a C-H bond on the polymer back-bone through sigma-bond metathesis, and inserting ethylene at the new M-C bond. Consistent with the proposed C-H bond activation mechanism, the catalyst was found to insert ethylene into the C-H bonds of alkanes such as heptane. This mechanism for producing LCB does not appear to be limited to vanadium-based catalysts. A metallocene-based catalyst was also found to insert ethylene into alkanes suggesting this new mechanism may explain the formation of LCB in some metallocene-produced polyethylene. In addition to vanadium and metallocene-based catalyst systems which demonstrate C-H bond activation, we will discuss results for other catalyst systems, which show no evidence of C-H bond activation. In these other systems, the vinyl reincorporation mechanism appears valid for producing LCB.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT



L9 ANSWER 23 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:687482 CAPLUS  
DN 135:242673  
TI Organoborane complexes with metallocenes for polymerization catalysts  
IN Marks, Tobin J.; Chen, You-Xian  
PA Northwestern University, USA  
SO U.S., 28 pp., Cont.-in-part of U.S. 6,087,460.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6291695	B1	20010918	US 1999-329765	19990610
	US 5856256	A	19990105	US 1997-800548	19970218 <--
	US 6087460	A	20000711	US 1998-220741	19981223 <--
	US 2001034424	A1	20011025	US 2001-863721	20010523
	US 6403732	B2	20020611		
PRAI	US 1996-11920P	P	19960220		
	US 1997-800548	A3	19970218		
	US 1998-220741	A2	19981223		
	US 1999-329765	A3	19990610		

OS MARPAT 135:242673

AB The title complexes comprise a cation formed from a d-block or f-block metal compound by loss of a leaving group and an anion formed by transfer of the leaving group to an organoborane BR'nR"3-n wherein R' is a fluoroaryl group having at least one addnl. substituent other than fluorine, wherein each R" is, independently, (i) a fluoroaryl group having at least one addnl. substituent other than fluorine, or (ii) a fluorinated aryl group devoid of addnl. substitution, and n is 1 or 2, or an organoborane BRlnR23-n, where R1 is a perfluorinated polycyclic fused ring and R2 is a pentafluorophenyl group. These organoboranes have a Lewis acid strength essentially equal to or greater than that of the corresponding organoborane in which the substituent is replaced by fluorine, or have greater solubility in organic solvents. When used as a cocatalyst in the formation of novel catalytic complexes with d- or f-block metal compds. having at least one leaving group such as a Me group, these triorganoboranes, because of their ligand abstracting properties, produce corresponding anions which are capable of only weakly, if at all, coordinating to the metal center, and thus do not interfere in various polymerization processes. Complexes with metallocenes are typically used for polymerization of olefins, styrene, and Me methacrylate.

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 24 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:573528 CAPLUS  
DN 135:153238  
TI Catalyst component dispersion comprising an ionic compound and solid addition polymerization catalysts for olefin polymerization  
IN Jacobsen, Grant B.; Loix, Pierre H. H.; Stevens, Theo J. P.  
PA The Dow Chemical Company, USA  
SO U.S., 33 pp., Cont.-in-part of U.S. 5,783,512.  
CODEN: USXXAM

DT Patent  
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6271165	B1	20010807	US 1999-297422	19990621
	US 5783512	A	19980721	US 1996-768518	19961218 <--
	WO 9827119	A1	19980625	WO 1997-US21875	19971201 <--
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,				

GN, ML, MR, NE, SN, TD, TG

PRAI US 1996-768518 A2 19961218  
WO 1997-US21875 W 19971201

OS MARPAT 135:153238

AB A dispersion of supported and nonsupported catalyst components comprising (1) an ionic compound comprising (a) a cation and (b) an anion having up to 100 nonhydrogen atoms and the anion containing  $\geq 1$  substituent having a moiety with an active H, (2) an organometal or metalloid compound selected from Groups 2, 12, 13, or 14 elements, (3) a transition metal compound as catalyst precursor and (4) optionally, a support material, where the supported catalyst component is in solid form dispersed in a diluent. Thus, to a reactor containing triisobutylaluminum in n-hexane, ethylene and hydrogen was added the adduct of solid [(p-HOC6H4)B(C6F5)3][NHMe(C18-22H37-45)2] and (C5Me4SiMe2NBut)Ti( $\eta$ 4-1,3-pentadiene) dispersed in Isopar E and AlEt3 at 60°/10 bar to give polyethylene having bulk d. 0.29 g/cm3.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 25 OF 829 CAPLUS COPYRIGHT 2005 ACS on STM

AN 2001:537511 CAPLUS

DN 135:122940

TI Preparations of functionalized and graft polyolefin copolymers having narrow molecular weight and composition distributions

IN Chung, Tze-Chiang; Dong, Jinyong

PA The Penn State Research Foundation, USA

SO U.S., 20 pp., Cont.-in-part of U.S. 6,096,849.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6265493	B1	20010724	US 2000-573737	20000518
	US 6096849	A	20000801	US 1999-359345	19990721 <--
	WO 2001007489	A1	20010201	WO 2000-US18015	20000629
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2001047069	A1	20011129	US 2001-810440	20010319
	US 6414102	B2	20020702		
PRAI	US 1999-359345	A2	19990721		
	US 2000-573737	A	20000518		

AB The title copolymers (I), ranging from semicryst. thermoplastics to amorphous elastomers, are prepared by grafting monomers, e.g., styrene, p-methylstyrene and Me methacrylate, etc., to linear copolymers of  $\alpha$ -olefins and divinylbenzene with Mn 1000-10,000, wherein I can be prepared from both step and chain polymerization reactions. Thus, 0.85 g a divinylbenzene-ethylene-1-octene terpolymer was metalated with 0.6 mmol sec-BuLi then reacted with styrene at ambient temperature for 1 h to give a graft copolymer with 19 graft/1000 C and graft length 1.69+103 g/mol.

RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 26 OF 829 CAPLUS COPYRIGHT 2005 ACS on STM

AN 2001:524130 CAPLUS

DN 135:227289

TI Polymerization and copolymerization of ethylene with higher  $\alpha$ -olefins using metallocene catalysts with indenyl ligands

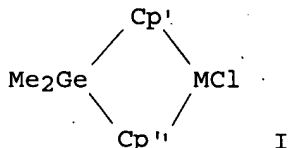
AU Ivanchev, S. S.; Badaev, V. K.; Ivancheva, N. I.; Khaikin, S. Ya.; Polyakov, A. A.; Voskoboinikov, A. Z.; Lemenovskii, D. A.

CS S.-Peterb. Fil., Inst. Kataliza im. G. K. Boreskova, Sib. Otd. Ross. Akad.

SO Nauk, St. Petersburg, 197198, Russia  
 Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (2000),  
 42(12), 2097-2103  
 CODEN: VSSBEE; ISSN: 1023-3091  
 PB MAIK Nauka/Interperiodica Publishing  
 DT Journal  
 LA Russian  
 AB The rate of polymerization and copolymn. of ethylene with 1-octene and  
 4-methyl-1-pentene initiated by five bis(indenyl) derivs. of metallocene  
 catalysts differing by chirality and substituents in bridge groups was  
 studied. The activity of the catalysts was found to depend on their  
 structure and the temperature of polymerization It was shown that high-mol.-mass  
 polymers may be prepared with a high yield at temps. suitable from the  
 technol. viewpoint (70-800C). The thermal characteristics of the  
 resulting polymers were determined by DSC.

L9 ANSWER 27 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:524027 CAPLUS  
 DN 135:93011  
 TI Cyclic germanium-bridged metallocene catalysts for polymerization of  
 olefins  
 IN Xu, Shansheng; Zhou, Xiuzhong; Wang, Baiquan; Dai, Xuliang  
 PA China Petrochemical Corp., Peop. Rep. China  
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
 CODEN: CNXXEV  
 DT Patent  
 LA Chinese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1276387	A	20001213	CN 2000-109698	20000622 <--
PRAI	CN 2000-109698		20000622		
GI					



AB The cyclic germanium bridged metallocene compound I (M = Ti or Zr; Cp' =  
 2,3,4,5-tetramethylcyclopentadienyl (Cp), tert-Bu-Cp, indenyl,  
 2-methylindenyl, 2-methyl-4-phenylindenyl; Cp'' = Cp, 2,3,4,5-tetramethyl-  
 Cp, tert-Bu-Cp, indenyl, 2-methylindenyl, 2-methyl-4-phenylindenyl) is  
 useful as catalyst for polymerization of ethylene or propylene. Thus, ethylene  
 was polymerized in the presence of I (M = Zr, Cp', Cp'' = 2-methylindenyl) with  
 MAO catalyst at 20° to give a polymer having Mw/Mn 2.39 and  
 catalyst activity 3.38 kgPE/mmolZr-h.

L9 ANSWER 28 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:521929 CAPLUS  
 DN 135:107717  
 TI (Polyfluoroaryl)fluoroanions of aluminum, gallium, and indium of enhanced  
 utility, uses thereof, and products based thereon  
 IN Marks, Tobin J.; Chen, You-xian  
 PA Northwestern University, USA  
 SO U.S., 20 pp., Cont.-in-part of U.S. Ser. No. 222,326, abandoned.  
 CODEN: USXXAM

DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6262200	B1	20010717	US 1999-329764	19990610
	US 5854166	A	19981229	US 1997-912617	19970818 <--
	US 6218332	B1	20010417	US 2000-634144	20000808

US 6388114 B1 20020514 US 2001-810967 20010316  
 PRAI US 1996-24190P P 19960819  
 US 1997-912617 A1 19970818  
 US 1998-222326 B2 19981229  
 US 1999-329764 A3 19990610  
 US 2000-634144 A3 20000808

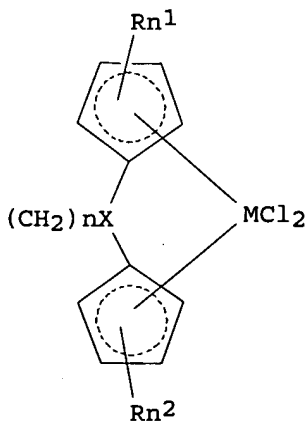
OS MARPAT 135:107717

AB The (polyfluoroaryl)fluoroanions of aluminum, gallium, and indium are novel weakly coordinating anions which are highly fluorinated. (Polyfluoroaryl)fluoroanions of one such type contain at least one ring substituent other than fluorine. These (polyfluoroaryl)fluoroanions of aluminum, gallium, and indium have greater solubility in organic solvents, or have a coordinative ability essentially equal to or less than that of the corresponding (polyfluoroaryl)fluoroanion of aluminum, gallium, or indium in which the substituent is replaced by fluorine. Another type of new (polyfluoroaryl)fluoroanion of aluminum, gallium, and indium have 1-3 perfluorinated fused ring groups and 2-0 perfluorophenyl groups. When used as a cocatalyst in the formation of novel catalytic complexes with d- or f-block metal compds. having at least one leaving group such as a Me group, these anions, because of their weak coordination to the metal center, do not interfere in the ethylene polymerization process, while affecting the propylene process favorably, if highly isotactic polypropylene is desired. Thus, the (polyfluoroaryl)fluoroanions of aluminum, gallium, and indium of this invention are useful in various polymerization processes such as are described.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 29 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:519400 CAPLUS  
 DN 135:77266  
 TI Preparation of spirocyclic metallocene catalysts for ethylene polymerization  
 IN Xu, Shansheng; Zhou, Xiuzhong; Wang, Baiquan; Deng, Xiaobin  
 PA China Petrochemical Corp., Peop. Rep. China  
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 9 pp.  
 CODEN: CNXXEV  
 DT Patent  
 LA Chinese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1276385	A	20001213	CN 2000-109695	20000622 <--
PRAI	CN 2000-109695		20000622		
OS	MARPAT 135:77266				
GI					



AB The title compds. I, wherein X=Si, C, n=4-6, M=Ti, Zr, or Hf, Rn1, Rn2=H

or Me, or R1n-Cp=R2n-Cp=2-Me-Ind, are synthesized by condensing cyclopentadiene (1,1-dichlorosilacyclopentane is used when X=Si) with cyclic ketone in THF in the presence of NaOH at room temperature for 2-6 h, hydrolyzing, washing with acid solution to obtain ligand, allowing to react with butyllithium, and complexing with metal chloride for 8-10 h. Polyethylene is prepared by polymerization of ethylene in the presence of I and methylaluminum oxide.

L9 ANSWER 30 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:429542 CAPLUS  
 DN 135:33994  
 TI Thermoplastic polyolefin compositions containing compatibilizers  
 IN Kaufman, Lawrence George; Cozewith, Charles; Gadkari, Avinash Chandrakant; Dharmarajan, Narayanaswami Raja; Ellul, Maria Dolores  
 PA Exxon Chemical Patents, Inc., USA  
 SO U.S., 14 pp., Cont.-in-part of U.S. Ser. No. 991,134, abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6245856	B1	20010612	US 1998-94995	19980615
	WO 9965982	A1	19991223	WO 1999-US12892	19990608 <--
	W: AU, BR, CA, CN, JP, KR, MX, RU				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRAI	US 1996-33463P	P	19961217		
	US 1997-991134	B2	19971216		
	US 1998-94995	A	19980615		
AB	A thermoplastic olefin composition comprises: (a) 88-50% polypropylene, the polypropylene having a melt flow rate of at least 20 g/10 min; (b) 10-50% elastomer wherein the elastomer is selected from the group consisting of ethylene-alpha olefin elastomers and ethylene-alpha olefin-diene elastomers; wherein the elastomer has an ethylene content that ranges from 90 to 45%; (c) 2-15% of a compatibilizer comprising an ethylene-propylene copolymer having a propylene content of at least 80%, wherein the compatibilizer has a mol. weight distribution of from 1.8 to 4.5 and further wherein the compatibilizer is produced using a metallocene polymerization catalyst.				

RE.CNT 27. THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 31 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2001:333628 CAPLUS  
 DN 134:340824  
 TI Polymer-supported metallocene catalyst compositions useful for olefin polymerization  
 IN Vizzini, James C.  
 PA Exxon Chemical Patents, Inc., USA  
 SO U.S., 11 pp., Cont.-in-part of U.S. 6,100,214.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6228795	B1	20010508	US 1998-184358	19981102
	US 6100214	A	20000808	US 1998-92752	19980605 <--
	EP 1312618	A2	20030521	EP 2002-26373	19980605
	EP 1312618	A3	20031210		
	R: AT, BE, DE, ES, FR, GB, IT, NL				
	US 2002010079	A1	20020124	US 1999-277339	19990326
	US 6426313	B2	20020730		
	WO 2000025916	A1	20000511	WO 1999-US25336	19991028 <--
	W: AU, BR, CA, CN, CZ, HU, IN, JP, MX, SG				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1131157	A1	20010912	EP 1999-956751	19991028

EP 1131157 B1 20050713  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI

PRAI US 1997-48965P P 19970605  
US 1998-79569P P 19980327  
US 1998-92752 A2 19980605  
US 1998-79563P P 19980327  
EP 1998-925286 A3 19980605  
US 1998-184358 A 19981102  
WO 1999-US25336 W 19991028

OS MARPAT 134:340824

AB The title compns. comprise the reaction product of: (A) a polymeric support functionalized by a covalently bonded protonated ammonium salt with a noncoordinating anion such as B(C6F5)4-, and (B) one or more bridged, substituted indenyl metallocene compds., wherein the metallocene is activated for polymerization by an ionizing reaction and stabilized in cationic form with a noncoordinating anion. A typical polymeric support is chloromethylated polystyrene-co-divinylbenzene beads aminated with dimethylamine then treated with (PhNMe2H)[B(CC6F5)4]. Propylene polymers produced by these supported catalyst systems have m.ps. and polymer microstructures similar to propylene polymers produced using analogous unsupported catalyst systems.

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

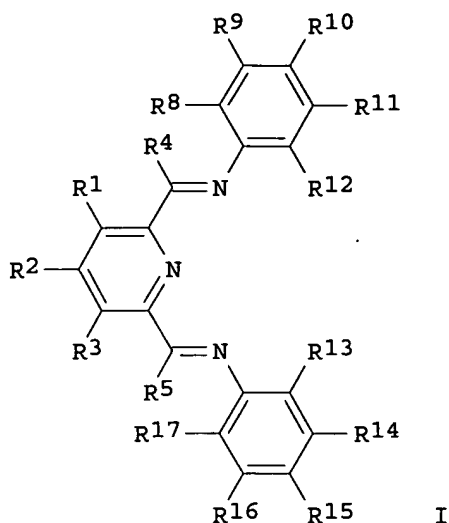
L9 ANSWER 32 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2001:302382 CAPLUS  
DN 134:326893  
TI Tridentate ligands based on bis(iminomethyl)pyridine derivatives  
IN Bennett, Alison  
PA E. I. Du Pont De Nemours and Company, USA  
SO U.S. Pat. Appl. Publ., 17 pp., Cont. -in-part of U. S. Ser. No. 273,409.  
CODEN: USXXCO  
DT Patent  
LA English

FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001000519	A1	20010426	US 2000-729305	20001204
	US 6423848	B2	20020723		
	US 5955555	A	19990921	US 1997-991372	19971216 <--
	EP 1127897	A2	20010829	EP 2001-200886	19971216
	EP 1127897	A3	20040102		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
	JP 2002302510	A2	20021018	JP 2002-15649	19971216
	US 6214761	B1	20010410	US 1999-273409	19990322
PRAI	US 1996-33656P	P	19961217		
	US 1997-991372	A2	19971216		
	US 1999-273409	A2	19990322		
	EP 1997-953340	A3	19971216		
	JP 1998-528000	A3	19971216		

OS MARPAT 134:326893

GI



AB Title derivs. I [R1-3, R9-16 = H, (substituted) hydrocarbyl, or inert functional group; R4, R5 = H or (substituted) hydrocarbyl, R8, R12, R13, R17 = (substituted) hydrocarbyl or inert functional group, any 2 of R8-17 that are vicinal to one another taken together may form a ring] are useful for as Co or Fe complexes for catalysts in polymerization of olefins.

L9 ANSWER 33 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:78429 CAPLUS

DN 134:148016

TI Linear copolymers of  $\alpha$ -olefins and divinylbenzene and graft copolymers

IN Chung, Tze-Chiang; Dong, Jinyoung

PA The Penn State Research Foundation, USA

SO PCT Int. Appl., 63 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2001007489	A1	20010201	WO 2000-US18015	20000629	
	W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	US 6096849	A	20000801	US 1999-359345	19990721 <--	
	US 6265493	B1	20010724	US 2000-573737	20000518	
PRAI	US 1999-359345	A	19990721			
	US 2000-573737	A	20000518			
OS	MARPAT 134:148016					

AB A linear, homogeneous copolymer comprising 50-99.9 mol% of  $\alpha$ -olefin units and divinylbenzene comonomer units is characterized by having a ratio of total unsatn./divinylbenzene (TUS/DOU) between 0.8 and 1.1, a number average mol. weight of at least 1.000, and a ratio of weight average mol. weight to number average mol. weight of less than 4 and is prepared by using a single-site metallocene catalyst. Graft copolymers are obtained by using the above linear polymer as backbone.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 34 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:17645 CAPLUS  
 DN 135:46480  
 TI Isotactic polypropylene catalyzed by supported metallocene catalysts  
 AU Hong, Han; Zhang, Mingge; Zhou, Ding; Yan, Weidong; He, Dawei; Hu, Youliang  
 CS State Key Laboratory of EngineeringPlastics, Center of MolecularScience, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China  
 SO Xinshiji De Cuihau Kexue Yu Jishu, Quanguo Cuihuaxue Jihuiyi Lunwenji, 10th, Zhangjiajie, China, Oct. 15-19, 2000 (2000), 1049-1050.  
 Editor(s): Zhong, Bing. Publisher: Shanxi Kexue Jishu Chubanshe, Taiyuan, Peop. Rep. China.  
 CODEN: 69ASHU  
 DT Conference  
 LA Chinese  
 AB The effects of structure and preparation method of metallocene catalysts on their catalytic properties were studied. The catalysts were SiO2/MAO/Me2Si[Ind]2ZrCl2, Me2Si[Ind]2ZrCl2, SiO2/MAO/Me2Si[2-Me-Ind]2ZrCl2, and Me2Si[2-Me-Ind]2ZrCl2 (Me = methyl; Ind = indenyl; and MAO = methylaluminum oxide). The effects of Al compds. (Al tri-Me, Al tri-Et, and Al triisobutyl) on the reaction were also studied. Spherical particles of isotactic polypropylene were obtained in the presence of SiO2/MAO/rac-Me2Si[2-Me-4-Naph-Ind]2ZrCl2 using Al tri-Et or Al triisobutyl as promoter.

L9 ANSWER 35 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:14218 CAPLUS

DN 134:208218

TI Characterization of polypropylenes prepared with bis-indenyl type metallocene and MgCl2-supported TiCl4 catalyst systems

AU Kashiwa, Norio; Imuta, Jun-Ici; Tsutsui, Toshiyuki; Hama, Shun-Ichi; Kojoh, Shin-Ichi

CS Organo-Metal Complexes Catalization Laboratory, Mitsui Chemicals, Inc., Sodegaura-City, Chiba, 299-0265, Japan

SO Macromolecular Symposia (2000), 159(Polymer Science and Industrial Research in the Fast-Changing Age), 19-26

CODEN: MSYMEC; ISSN: 1022-1360

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The homo-polypropylene: m-PP, prepared with rac-Me2Si[2-n-Pr-4-(9-Phenanthryl)-Ind]2ZrCl2, showed 99.6% of [mmmm] and 162.8 °C of melting temperature (Tm). This polymer was compared by TREF anal. with the homo-polypropylene: Ti-PP, which was produced by our latest MgCl2-supported TiCl4 catalyst system and showed 99.0% of [mmmm] and 165.7 °C of Tm. It was indicated that m-PP has narrower stereoregularity.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 36 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:10683 CAPLUS

DN 134:72766

TI Olefinic thermoplastic elastomer composition and its manufacture

IN Itoh, Yuichi; Kobayashi, Kyoko; Uchiyama, Akira; Kawasaki, Masaaki

PA Mitsui Chemicals, Inc., Japan

SO Eur. Pat. Appl., 33 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1065241	A2	20010103	EP 2000-305435	20000628
	EP 1065241	A3	20010411		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001011120	A2	20010116	JP 1999-181023	19990628
	JP 2001011248	A2	20010116	JP 1999-181025	19990628



	JP 2001011249	A2	20010116	JP 1999-181026	19990628
	CA 2312436	AA	20001228	CA 2000-2312436	20000627 <--
	US 2002055591	A1	20020509	US 2001-986477	20011108
	US 6635705	B2	20031021		
PRAI	JP 1999-181023	A	19990628		
	JP 1999-181025	A	19990628		
	JP 1999-181026	A	19990628		
	US 2000-604820	A3	20000628		
AB	<p>An olefinic thermoplastic elastomer composition comprises (A) 10-60 parts of a crystalline polyolefin resin, (B) 38-88 parts of an ethylene-<math>\alpha</math>-olefin-non-conjugated polyene copolymer rubber, and (C) 2-30 parts of at least one rubber selected from polyisobutylene, butyl rubber, and a propylene-ethylene copolymer rubber having a propylene content of <math>\geq 50</math> mol% or (D) an ethylene-<math>\alpha</math>-olefin copolymer having a d. of 0.870-0.940 g/cm<sup>3</sup> and an ethylene content of <math>\geq 85</math> mol%. The ethylene-<math>\alpha</math>-olefin-non-conjugated polyene copolymer rubber is a crosslinked thermoplastic elastomer composition being obtained by random copolymer. of ethylene, an C3-20 <math>\alpha</math>-olefin, and a non-conjugated polyene in the presence of a metallocene catalyst and is characterized by (1) containing the unit (a) derived from the ethylene and the unit (b) derived from the <math>\alpha</math>-olefin in a molar ratio of 40/60 to 95/5 [(a)/(b)], (2) having an iodine value of 1-50, and (3) having an intrinsic viscosity, measured in decalin at 135°, of 1.0 to 10 dL/g.</p>				
L9	ANSWER 37 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN				
AN	2001:9070 CAPLUS				
DN	134:193522				
TI	Geometry prediction of bridged zirconocene dichlorides by quantum chemical methods				
AU	Linnolahti, Mikko; Hirva, Pipsa; Pakkanen, Tapani A.				
CS	Department of Chemistry, University of Joensuu, Joensuu, FIN-80101, Finland				
SO	Journal of Computational Chemistry (2000), Volume Date 2001, 22(1), 51-64				
	CODEN: JCCHDD; ISSN: 0192-8651				
PB	John Wiley & Sons, Inc.				
DT	Journal				
LA	English				
AB	<p>The ab initio Hartree-Fock theory was used to calculate accurate geometry predictions for bridged zirconocene dichlorides. Equilibrium geometries of crystallog. characterized bridged zirconocene dichlorides were optimized by Hartree-Fock, MP2 [Moeller-Plesset second-order perturbation theory], BLYP [Becke-Lee-Yang-Parr] d. functional, and B3LYP hybrid d. functional methods, with basis sets ranging from 3-21G* to 6-311G**. Selected geometrical parameters were compared with exptl. crystal structures. The least expensive HF/3-21G* method proved to be notably accurate. The accuracy of HF/3-21G* was verified by a comprehensive data set of 62 bridged zirconocene dichlorides. Exptl. corrections were applied to the optimized geometry parameters to eliminate systematic deviations. Corrections resulted in considerably improved accuracy for systematically overestimated metal-ligand distances, with maximum deviation falling from 0.081 to 0.039 Å, and absolute average deviations from 0.048 to 0.012 Å. Ligand-metal-ligand angles were predicted accurately with absolute average deviations of 0.7-1.3°. Zirconium-chlorine distances and chlorine-zirconium-chlorine angles are relatively constant in the studied mols. Zirconium-cyclopentadienyl distances can be influenced mainly by modifying the ligand structure, whereas cyclopentadienyl-zirconium-cyclopentadienyl angles and cyclopentadienyl-cyclopentadienyl plane angles can be controlled by bridge modifications. The HF/3-21G* method can be applied for the estimation of steric effects in zirconocene catalyzed polymerization reactions, therefore being suitable for the construction of structure-polymerization property correlations.</p>				
RE.CNT	55	THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD			
		ALL CITATIONS AVAILABLE IN THE RE FORMAT			
L9	ANSWER 38 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN				
AN	2000:909196 CAPLUS				
DN	134:57108				
TI	Mixed metal oxide compositions as catalysts for preparation of polymers				

IN McDaniel, Max P.; Martin, Shirley J.; Collins, Kathy S.; Johnson, Marvin M.  
PA Phillips Petroleum Co., USA  
SO U.S., 8 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6165929	A	20001226	US 1998-81480	19980518 <--
	US 6531550	B1	20030311	US 2000-584438	20000531
	US 2003120002	A1	20030626	US 2003-357212	20030204
	US 2004143078	A1	20040722	US 2004-751619	20040105
	US 6887819	B2	20050503		
	US 2005131173	A1	20050616	US 2005-51430	20050204
PRAI	US 1998-81480	A3	19980518		
	US 2000-584438	A3	20000531		
	US 2003-357212	B1	20030204		
	US 2004-751619	A3	20040105		

OS MARPAT 134:57108

AB The title compns. contain metallocenes, mixed oxide compds., and organoaluminum compds., and are useful for polymerization of ethylene. A catalyst system contained bis(n-butylcyclopentadienyl)zirconium dichloride, tri-Et aluminum and boria-impregnated alumina.

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 39 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:905553 CAPLUS

DN 134:43232

TI Manufacture of propylene polymer-based thin moldings by extrusion

IN Sato, Hitoshi; Hirose, Taketo; Shiota, Tsutomu; Saito, Jun

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000355037	A2	20001226	JP 1999-169520	19990616 <--
PRAI	JP 1999-169520		19990616		

OS MARPAT 134:43232

AB The moldings, useful for packaging, etc., are manufactured by extruding metallocene-catalyzed propylene polymers in the absence of stabilizers. Thus, a composition containing isotactic polypropylene [polymerized in the presence of dimethylsilylene(2,3,5-trimethylcyclopentadienyl)(2',4',5'-trimethylcyclopentadienyl)zirconium dichloride, Me aluminoxane, SiO<sub>2</sub>, and Et<sub>3</sub>Al] and LDPE (L 6810, L 1820) was extruded through a T-die with gap 0.75 mm and laminated with craft paper to give a film showing reduced smoke and odor in extruding and good productivity.

L9 ANSWER 40 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:897941 CAPLUS

DN 134:57103

TI Supported catalysts for olefin polymerization

IN Koch, Matthias; Stork, Martin; Klapper, Markus; Muellen, Klaus; Gregorius, Heike; Rief, Ursula

PA Basf A.-G., Germany

SO Ger. Offen., 14 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19927766	A1	20001221	DE 1999-19927766	19990617 <--
	WO 2000078823	A1	20001228	WO 2000-EP5256	20000607 <--

W: BR, JP, US

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
PT, SE

BR 2000011717	A	20020305	BR 2000-11717	20000607
EP 1189950	A1	20020327	EP 2000-942025	20000607
EP 1189950	B1	20040512		

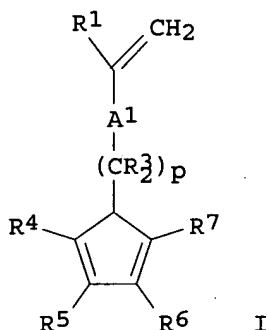
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI

JP 2003502489	T2	20030121	JP 2001-505580	20000607
AT 266680	E	20040515	AT 2000-942025	20000607
ES 2220480	T3	20041216	ES 2000-942025	20000607

PRAI DE 1999-19927766	A	19990617		
WO 2000-EP5256	W	20000607		

OS MARPAT 134:57103

GI



AB Supported catalysts for olefin polymerization contain (A) polymer supports having units formed from R1R2CH:CH2 [R1 = H, C1-4 alkyl, or Ph, R2 = (substituted) aryl, (substituted) alkyl, or (substituted) alkenyl], cyclopentadienes I [R1 = H, C1-4 alkyl, or Ph; A1 = direct bond or (substituted) phenylene; R3, R4, R5 = H, C1-10 alkyl, (substituted) Ph; p = 0-8], and a polar monomer, (B) ≥1 metallocene complex, (C) ≥1 metallocenium-ion-forming compound, and, optionally, (D) ≥1 organometallic compound of alkali, alkaline earth, or Group IIIA metals. These supported metallocene catalysts are used at higher polymerization temps. to provide polyolefins with good morphol. A typical polymer support was manufactured by heating 1280 mg NaOMe with 1 g 10:30:60 (mol ratio) p-bromostyrene-p-chloromethylstyrene-styrene copolymer 24 h at 60° in MeOH-THF, adding 0.4 mmol BuLi in hexane to 500 mg resulting intermediate in THF at -78°, holding at -78° for 10 min, adding 0.4 mmol dimethylfulvene in THF, holding 10 min at -78°, and warming to room temperature

L9 ANSWER 41 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:882373 CAPLUS

DN 134:163376

TI High-temperature ethylene/α-olefin copolymerization with a zirconocene catalyst: effects of the zirconocene ligand and polymerization conditions on copolymerization behavior

AU Hasegawa, Saiki; Sone, Makoto; Tanabiki, Masao; Sato, Morihiko; Yano, Akihiro

CS Yokkaichi Research Laboratory, Tosoh Corporation, Mie, 510-8540, Japan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2000), 38(Suppl.), 4641-4648

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB Copolymns. of ethylene and 1-hexene with various zirconocene compds. at a high temperature were carried out to study the relation between the ligand structure of zirconocene compds. and the copolymn. behavior. All of the

indenyl-based zirconocene compds. in combination with dimethylanilinium tetrakis(pentafluorophenyl)borate/triisobutylaluminum produced only low mol. weight copolymers at a high temperature, regardless of the substituents and bridged structures of the zirconocene compds. However, zirconocene compds. with a fluorenyl ligand gave rise to a significant increase in the activity and mol. weight of the copolymers by the selection of a diphenylmethylen bridge structure even at a high temperature Ethylene-1-hexene copolymers obtained with the fluorenyl-based catalysts contained inner double bonds accompanied by the generation of hydrogen, presumably because of a C-H bond activation mechanism. The contents of the inner double bonds were significantly influenced by the polymerization conditions, including the 1-hexene feed content, polymerization temperature, and ethylene pressure.

RE: CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 42 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:881206 CAPLUS

DN 134:42583

TI A method for preparing a supported catalyst system and its use in a polymerization process for olefins

IN Kao, Sun-Chueh; Karol, Frederick J.

PA Univation Technologies, Llc, USA

SO PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN: CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000075198	A1	20001214	WO 2000-US10248	20000418 <--
	W: AU, BR, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 2001047065	A1	20011129	US 1999-325172	19990603
	CA 2338202	AA	20001214	CA 2000-2338202	20000418 <--
	BR 2000006189	A	20010417	BR 2000-6189	20000418
	EP 1114069	A1	20010711	EP 2000-926041	20000418
	EP 1114069	B1	20030730		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2003501523	T2	20030114	JP 2001-502478	20000418
	AT 246209	E	20030815	AT 2000-926041	20000418
	ES 2204583	T3	20040501	ES 2000-926041	20000418
	AU 779594	B2	20050203	AU 2000-44638	20000418 <--
	AU 2000044638	A5	20001228		
PRAI	US 1999-325172	A	19990603		
	WO 2000-US10248	W	20000418		

AB The invention is directed to a method for making a supported olefin-polymerization catalyst composition with higher activity by contacting a preformed supported bulky ligand metallocene-type catalyst system with an addnl. amount of a bulky ligand metallocene-type catalyst compound

RE: CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 43 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:881162 CAPLUS

DN 134:57101

TI Dimeric group-4 metallocenes in +3 oxidation state as metallocene catalysts for olefin polymerization

IN Chen, Eugene Y.; Devore, David D.

PA Dow Chemical Company, USA

SO PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN: CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000075152	A1	20001214	WO 2000-US12680	20000510 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,  
 CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID,  
 IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
 MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
 SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, YU, ZA, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,  
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2368012 AA 20001214 CA 2000-2368012 20000510 <--  
 AU 2000049968 A5 20001228 AU 2000-49968 20000510 <--  
 EP 1196424 A1 20020417 EP 2000-932220 20000510  
 EP 1196424 B1 20030618

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO

JP 2003501437 T2 20030114 JP 2001-502433 20000510

PRAI US 1999-137881P P 19990607  
 WO 2000-US12680 W 20000510

OS MARPAT 134:57101

AB Dimeric Group 4 metal metallocene compds. wherein the metal is in the +3  
 formal oxidation state useful as components of catalysts for addition polymerization  
 are disclosed. Thus, a dimethylsilanebis(2-methyl-4-phenylindenyl-1-  
 yl)chlorozirconium (III) dimer was prepared, oxidized and used in  
 homopolymn. of propylene.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 44 OF 829 CAPLUS COPYRIGHT 2005 ACS on STM

AN 2000:876772 CAPLUS

DN 134:42577

TI Indenyl compound catalysts for the polymerization of olefins

IN Arts, Henricus Johannes; Kranenburg, Mirko; Meijers, Ramon Hubertus Anna  
 Maria; Ijpeij, Edwin Gerard; Gruter, Gerardus Johannes Maria; Beijer,  
 Felix Hugo

PA DSM N.V., Neth.

SO Eur. Pat. Appl., 31 pp.

CODEN: EPXXDW

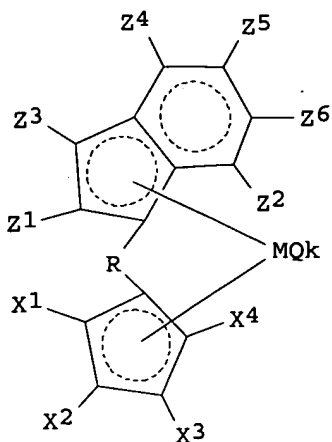
DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1059300	A1	20001213	EP 1999-201856	19990611 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
EP 1059299	A1	20001213	EP 2000-202021	20000607 <--
EP 1059299	B1	20031217		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 256692	E	20040115	AT 2000-202021	20000607
ES 2212964	T3	20040816	ES 2000-202021	20000607
JP 2001026598	A2	20010130	JP 2000-175924	20000612
US 6342622	B1	20020129	US 2000-591689	20000612
PRAI EP 1999-201856	A	19990611		
US 1999-162892P	P	19991101		
OS MARPAT 134:42577				

GI



AB Indenyl compds. I, wherein: M is a transition metal from the lanthanides or from group 3, 4, 5 or 6 of the Periodic System of Elements, Q is an anionic ligand to M, k is the number of Q groups, R is a bridging group and Z and X are substituents, wherein R contains at least one sp<sup>2</sup>-hybridized carbon atom that is bonded to the indenyl group at the 2-position with the exclusion of Ti(deshydronorbiphenacene) dichloride, are useful as catalysts for polymerization of olefins. Ethylene and 1-octene were copolymd. using [o-bis(2-indenyl)benzene]zirconiumdichloride and MAO catalysts.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 45 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:869678 CAPLUS  
DN 134:43465  
TI Polar monomer-grafted propylene rubber coating  
IN Tokida, Takashi; Saito, Tadao  
PA Mitsui Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 23 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000345098	A2	20001212	JP 1999-155467	19990602 <--
PRAI	JP 1999-155467		19990602		
OS	MARPAT 134:43465				
AB	Title rubber is a copolymer of propylene 50-95 mol% and 1-butene 5-50 mol% with limited viscosity 0.1-12 dL/g at 135° in decalin, monomer distribution ≤3, and chain random parameter B 1.0-1.5 which is grafted with 0.1-15% polar monomer. Thus 1-butene 90 and propylene (pressure 7 kg/cm <sup>2</sup> ) were polymerized to give a rubber, 110 g of which was reacted with maleic anhydride 8.8 g to give a product, showing limited viscosity 0.81 dL/g, graft amount 1.7%, m.p.80.0°, adhesion 100/100.				

L9 ANSWER 46 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:866459 CAPLUS  
DN 134:43459  
TI Compositions of propylene elastomer-based water dispersions useful for non-polluting coatings and their manufacture  
IN Tokita, Takashi  
PA Mitsui Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 24 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000344972	A2	20001212	JP 1999-155466	19990602 <--

PRAI JP 1999-155466 19990602

OS MARPAT 134:43459

AB The title compns. with low heat-sealing temperature comprise: (A) a random propylene-based elastomers 100, (B) a thermoplastic resin containing carboxylic acid group or its salt 1-60, (C) a surfactant 0.5-40, and (D) aqueous dispersing solvents 25-500 parts where the elastomers have a propylene content of 50-95 mol% and a 1-butene content of 5-55 mol%, a mol. weight distribution (Mw/Mn)  $\leq 3$ , an intrinsic viscosity ( $[\eta]$ ; in Decalin at 135°) of 0.1-12 dL/g and a random parameter B value of 1.0-1.5 and can be prepared in the presence of a bridged bisindenyl metallocene catalyst and an organoaluminum compound. Thus, mixing a maleated butene-propylene random copolymer elastomer (as A; preparation given) 100, maleated polyethylene 10 and potassium oleate 2 parts and extruding the mixture at 200° with continuously supplying 18.7% aqueous solution of potassium hydroxide gave a title composition with solid content of 45% and particle diameter 0.55  $\mu\text{m}$ , which was coated on aluminum foil by bar coater to give a film with 180° peel strength of 350-800 g/15 mm at heat-seal temperature of 110-140°.

L9 ANSWER 47 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:854807 CAPLUS

DN 134:163364

TI Synthesis of vinyl-terminated isotactic poly(propylene)

AU Weng, Weiqing; Markel, Eric J.; Dekmejian, Armenag H.

CS Baytown Polymers Center, Exxon Mobil Chemical Company, Baytown, TX, 77522, USA

SO Macromolecular Rapid Communications (2000), 21(16), 1103-1107

CODEN: MRCOE3; ISSN: 1022-1336

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB Isotactic poly(propylene)s with 60-80% vinyl chain-end selectivity were synthesized with metallocene catalysts. Some of these vinyl-terminated poly(propylene)s are highly stereoregular (mmmm pentads up to 95%) and have high crystalline m.ps. in the range of 140-150°C. Chain-end anal. using  $^{13}\text{C}$  NMR indicates the vinyl chain-ends in the polymer are most likely formed through  $\beta$ -Me elimination in the chain termination step.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 48 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:851226 CAPLUS

DN 134:29813

TI Manufacture of polyolefins with high polymerization activity

IN Matsumoto, Shimako; Fushimi, Masaki; Okumura, Kazuakai

PA Nippon Polyolefin K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000336106	A2	20001205	JP 1999-148731	19990527 <--
PRAI	JP 1999-148731		19990527		

AB Polyolefins are manufactured by polymerization of olefins using homogeneous catalyst solns. and water-soluble inorg. compds. as auxiliaries in a stopped-flow reactor. Propylene was polymerized in the presence of racemic dimethylsilylbis(2-methyl-4-phenyl-1-indenyl)zirconium dichloride, methylalcoxane, and NaCl to give polypropylene with Mn 5700, polymerization activity 11.0 g/mol-Zr-s and ash content <1%.

L9 ANSWER 49 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:842050 CAPLUS

DN 134:17863

TI Preparation of in-situ single-site transition-metal catalysts for olefin polymerization

IN Shaotian, Wang

PA Equistar Chemicals, L.P., USA

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000071251	A1	20001130	WO 2000-US13479	20000517 <--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6291386	B1	20010918	US 1999-318009	19990525
	CA 2370943	AA	20001130	CA 2000-2370943	20000517 <--
	EP 1189698	A1	20020327	EP 2000-936002	20000517
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2002010075	A1	20020124	US 2001-921355	20010802
	US 6790805	B2	20040914		
PRAI	US 1999-318009	A	19990525		
	WO 2000-US13479	W	20000517		

AB A process for the in-situ preparation of alkylated single-site transition-metal catalysts by contacting a precatalyst with an alkylating agent in the polymerization system. The precatalyst, which is produced prior to introducing into the polymerization system, is obtained by contacting a transition-metal complex and a boron-containing ionizing agent, optionally, with a support.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 50 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:832149 CAPLUS

DN 134:71954

TI Copolymerization of propylene with 1-octene catalyzed by rac-Me<sub>2</sub>Si(2,4,6-Me<sub>3</sub>-Ind)<sub>2</sub>ZrCl<sub>2</sub>/methyl aluminoxane

AU Fan, Zhi-Qiang; Yasin, Tariq; Feng, Lin-Xian

CS Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, 310027, Peop. Rep. China

SO Journal of Polymer Science, Part A: Polymer Chemistry (2000), 38(23), 4299-4307

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB The copolymn. of propylene with 1-octene was carried out with rac-dimethylsilylbis(2,4,6-trimethylindenyl)zirconium dichloride as a catalyst activated by methylaluminoxane (MAO) and an MAO/triisobutylaluminum mixture. The copolymn. conditions, including the polymerization temperature, Al/Zr molar ratio, and 1-octene concentration in the feed, significantly influenced the catalyst activity, 1-octene incorporation, polymer mol. weight, and melting temperature. The addition of 1-octene to the polymerization system caused a decrease in the activity, whereas the melting temperature and intrinsic viscosity of the polymer increased. The microstructure of the propylene-1-octene copolymer was characterized by <sup>13</sup>C NMR, and the reactivity ratios of the copolymn. were estimated from the dyad distribution of the monomer sequences. The amount of regioirregular structures arising from 2,1- and 1,3-misinserted propylene decreased as the 1-octene content increased. The influence of the propagation chain on the polymerization mechanism is proposed to be the main reason for the changes in the reactivity ratios and regioirregularity with the polymerization conditions.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

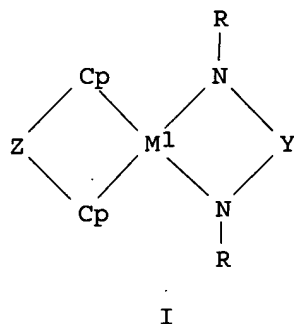
L9 ANSWER 51 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:830422 CAPLUS



DN 134:17596  
 TI Synthesis of ansa-metallocene catalysts  
 IN Jordan, Richard F.; Zhang, Xingwang  
 PA University of Iowa Research Foundation, USA  
 SO U.S., 13 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6153777	A	20001128	US 1999-431825	19991102 <--
PRAI	US 1999-431825		19991102		
OS	CASREACT 134:17596; MARPAT 134:17596				
GI					



AB A process of preparing in high yield racemic ansa-metallocene complexes, I (Cp = cyclopentadienyl, indenyl, fluorenyl, or related group  $\pi$ -bonded to metal, or hydrocarbyl, hydrocarbylmetalloid, halohydrocarbylmetalloid, etc.; Z = bridging group which links to Cp groups; M1 = Group 4 metal; R = H, Cl-40 hydrocarbyl, silyl, etc.; Y = bridging group which links two NR groups), by reacting a chelated bisamide Group 4 metal complex with an ansa-bis-cyclopentadienyl dianion reagent is described. I are useful as catalyst for olefin polymerization The meso isomers are not detectable in the reaction product.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 52 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:824486 CAPLUS  
 DN 134:5868  
 TI Elastic fibers and articles made therefrom, including crystalline and crystallizable polymers of propylene  
 IN Cheng, Chia Y.; Agarwal, Pawan Kumar; Datta, Sudhin  
 PA Exxon Chemical Patents Inc., USA  
 SO PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000070134	A1	20001123	WO 2000-US13010	20000512 <--
	W: AU, BR, CA, CN, JP, KR, MX				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2373271	AA	20001123	CA 2000-2373271	20000512 <--
	US 6342565	B1	20020129	US 2000-570584	20000512
	EP 1177337	A1	20020206	EP 2000-932340	20000512
	EP 1177337	B1	20050202		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, FI

EP 1505181 A1 20050209 EP 2004-25118 20000512  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI, CY

AT 288508 E 20050215 AT 2000-932340 20000512  
PRAI US 1999-133958P P 19990513  
EP 2000-932340 A3 20000512  
WO 2000-US13010 W 20000512

AB A soft, set-resistant, annealed fiber comprises a blend of polyolefins which includes: (a) a first polymer component (FPC) present in the fiber in the range of from 75-98%; wherein the FPC has a m.p. (by DSC) 25-70° a heat of fusion less than 25 J/g; wherein the FPC is a propylene-ethylene polymer (containing ≥80% propylene); and (b) a second polymer component (SPC) present in the fiber in the range of from 2-25%, wherein the SPC is an isotactic polypropylene, and has m.p. (by DSC) >130°, and a heat of fusion greater than 120 J/g; wherein the fiber exhibits a resistance to set equal to or less than 80% from a 400% tensile deformation, and wherein the blend of polyolefins in the fiber has a flexural modulus less than or equal to 12,000 psi in/in. The resultant blends manifest unexpected compatibility characteristics, increased tensile strength, and, improved resistance to elastic deformation.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 53 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:824341 CAPLUS

DN 134:5660

TI Thermoplastic membranes of propylene copolymers

IN Dharmarajan, N. R.; Bulawa, M. C.; Datta, Sudhin; Tsou, Andy H.

PA Exxon Chemical Patents Inc., USA

SO PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000069965	A1	20001123	WO 2000-US13359	20000515 <--
W: AU, BR, CA, CN, JP, KR, MX				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6500563	B1	20021231	US 2000-569362	20000511
AU 2000050176	A5	20001205	AU 2000-50176	20000515 <--
EP 1189986	A1	20020327	EP 2000-932455	20000515
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

US 6750284 B1 20040615 US 2000-570969 20000515  
US 2004198912 A1 20041007 US 2004-818164 20040405

PRAI US 1999-133966P P 19990513  
US 2000-570969 A3 20000515  
WO 2000-US13359 W 20000515

AB A thermoplastic membrane, useful as film, fluid barrier, and the like, is formed from a blend of: (a) a first polymer component comprising a propylene-ethylene copolymer containing 80-93 weight% of units derived from propylene and having a m.p. derived from stereoregular polypropylene sequences, as determined by differential scanning calorimetry (DSC), in the range of 25-70° and a heat of fusion of 2-25 J/g; (b) an inorg. filler; (c) a processing oil, and (d) optionally, a second polymer component comprising a stereoregular polypropylene containing <7 weight% of units derived from ethylene or C4-8 α-olefin monomers and having m.p., as determined by DSC, >130° and a heat of fusion >80 J/g.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 54 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:824340 CAPLUS

DN 134:5659

TI Thermoplastic membranes of propylene copolymers

IN Dharmarajan, N. R.; Bulawa, M. C.; Datta, Sudhin; Tsou, Andy H.

PA Exxon Chemical Patents Inc., USA  
SO PCT Int. Appl., 48 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000069964	A1	20001123	WO 2000-US13234	20000512 <--
	W: AU, BR, CA, CN, JP, KR, MX				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6500563	B1	20021231	US 2000-569362	20000511
	AU 2000048490	A5	20001205	AU 2000-48490	20000512 <--
	US 6750284	B1	20040615	US 2000-570969	20000515
	US 2004198912	A1	20041007	US 2004-818164	20040405
PRAI	US 1999-133966P	P	19990513		
	WO 2000-US13234	W	20000512		
	US 2000-570969	A3	20000515		

AB A thermoplastic membrane, useful as film, fluid barrier, and the like, is formed from a blend of: (a) a first polymer component comprising a propylene-ethylene copolymer containing 80-93 weight% of units derived from propylene and having a m.p. derived from stereoregular polypropylene sequences, as determined by differential scanning calorimetry (DSC), in the range of 25-70° and a heat of fusion of 2-25 J/g; (b) an inorg. filler; (c) a processing oil, and (d) optionally, a second polymer component comprising a stereoregular polypropylene containing <7 weight% of units derived from ethylene or C4-8  $\alpha$ -olefin monomers and having m.p., as determined by DSC, >130° and a heat of fusion >80 J/g.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 55 OF 829 CAPLUS COPYRIGHT 2005 ACS on STM  
AN 2000:824310 CAPLUS  
DN 134:17866

TI Amine-functionalized polyolefin copolymers as additives for hydrocarbon fuels or lubricating oils and their preparation  
IN Reed, Warren; Weatherhead, Richard Henry  
PA BP Chemicals Limited, UK  
SO PCT Int. Appl., 28 pp.  
CODEN: PIXXD2

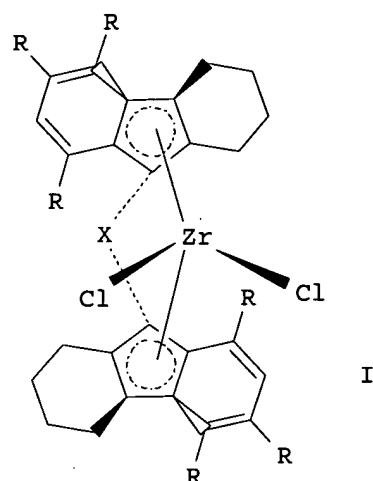
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000069921	A1	20001123	WO 2000-GB1615	20000426 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRAI	GB 1999-11242	A	19990515		

AB The noncryst. copolymer is prepared by (a) copolymerizing  $\geq 1$  C3-5  $\alpha$ -olefin (e.g., propene), a masked aminoalkene [e.g., di(trimethylsilyl)-protected undecenylamine], and optionally, ethylene at the presence of a metallocene catalyst [e.g., bis(1,3-dimethylcyclopentadienyl)zirconium dichloride] and  $\geq 1$  cocatalyst (e.g., methylaluminumoxane) to form a copolymer, and (b) optionally, demasking the copolymer. The copolymers are soluble in isooctane at temps. above -20° and are suitable for use in lubricating oils and hydrocarbon fuels.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 56 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:820359 CAPLUS  
 DN 134:131621  
 TI Synthesis of Novel Tetrahydrofluorenyl-Containing Group IV Metallocenes  
 for the Ziegler-Natta Type Polymerization of  $\alpha$ -Olefins  
 AU Thomas, Emma J.; Rausch, Marvin D.; Chien, James C. W.  
 CS Department of Chemistry, University of Massachusetts, Amherst, MA, 01003,  
 USA  
 SO Organometallics (2000), 19(26), 5744-5749  
 CODEN: ORGND7; ISSN: 0276-7333  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 134:131621  
 GI

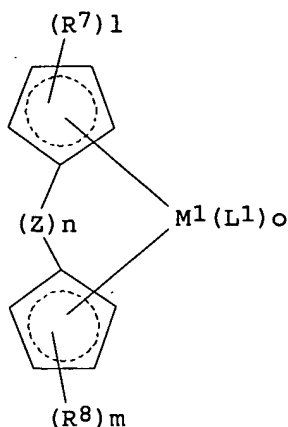


AB Several new, novel bridged and unbridged bis-tetrahydrofluorenyl  
 zirconocenes (I) ( $R = H, Me$ ;  $X = CH_2CH_2, SiMe_2$ , or is not present in the  
 case of unbridged bis-tetrahydrofluorenyl) were synthesized and evaluated  
 as Ziegler-Natta type catalysts for ethylene and propylene polymerization. The  
 complexes were found to be highly stable compared to some  
 bis-fluorenylzirconocenes. Polypropylene and polyethylene were produced  
 in good yield using the new catalyst precursors with MAO or Triethyl/TIBA as  
 cocatalysts. Both the unsubstituted and substituted bridged  
 bis-tetrahydrofluorenyl zirconocenes were isolated as 50:50 mixts. of rac  
 and meso isomers, which produced mostly atactic polypropylene. Partially  
 crystalline polypropylene was obtained at low temps. with bis(3-  
 methyltetrahydrofluorenyl)zirconium dichloride.  
 RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 57 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:808551 CAPLUS  
 DN 133:363115  
 TI Transition-metal metallocene compounds, catalyst systems, and their  
 preparation and use in the polymerization of olefins  
 IN Schottek, Jorg; Schauer, Diana; Kratzer, Roland  
 PA Targor G.m.b.H., Germany  
 SO Eur. Pat. Appl., 25 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1052263	A2	20001115	EP 2000-109863	20000510 <--

EP 1052263 A3 20021016  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 DE 19922020 A1 20001116 DE 1999-19922020 19990512 <--  
 JP 2001011089 A2 20010116 JP 2000-140837 20000512  
 PRAI DE 1999-19922020 A 19990512  
 OS MARPAT 133:363115  
 GI



AB The metallocenes have the structure I. [L1 = H, C1-10 hydrocarbyl, halogen, OR9, SR9, OSiR93, SiR93, PR92, NR92, SO2C6H4Me, COCF3, O2CCF3, SO2CF3, SO2C4F9, SO2CH2CF3; M1 = Group IIIB-VIB metal; each R7, R8 = H, SiR123, C1-30 organic group, or an adjacent pair complete an (un)substituted ring system; each R9 = halogen, C1-10 (halo)alkyl, C6-20 (halo)aryl; each R12 = H, C1-40 organic group; Z = bridging group; l, m = (5 - v); o = 1-4; v = 0, 1]. They are used with cocatalysts in the manufacture of polyolefins, especially isotactic polypropylene. Thus, 2-methyl-4-phenylindene in toluene was treated with anhydrous KOH and condensed with paraformaldehyde in the presence of a phase-transfer catalyst to give methylenebis(2-methyl-4-phenylindene); which was treated successively with BuLi and ZrCl4 to give a bridged metallocene. This was mixed with Me aluminoxane and deposited on SiO2 to give a catalyst, which polymerized propylene (pretreated with iso-Bu3Al) at 60° in a hydrocarbon solvent to produce polypropylene of weight-average mol. weight 92,000 at a catalyst activity of 156 kg polymer/g metallocene per h.

L9 ANSWER 58 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:792922 CAPLUS  
 DN 134:71941

TI Propene Polymerization with Catalyst Mixtures Containing Different  
 ansa-Zirconocenes: Chain Transfer to Alkylaluminum Cocatalysts and  
 Formation of Stereoblock Polymers

AU Lieber, Susanna; Brintzinger, Hans-Herbert

CS Fachbereich Chemie, Universitaet Konstanz, Konstanz, D-78457, Germany

SO Macromolecules (2000), 33(25), 9192-9199

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

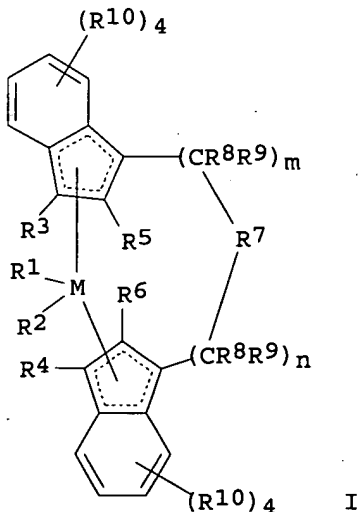
AB Substantial transfer of growing polypropyl chains to methylaluminoxane and trimethylaluminum occurs with the highly substituted, isospecific zirconocene catalyst Me2Si(2-Me-4-tert-Bu-C5H2)2ZrCl2/MAO, while little if any such chain transfer is observed for the more open isospecific catalyst Me2Si(2-MeInd)2ZrCl2/MAO, for aspecific H4C2(Flu)2ZrCl2/MAO, and for syndiospecific Ph2C(Cp)FluZrCl2/MAO. Propene polymerization with MAO-activated mixts. of Me2Si(2-MeInd)2ZrCl2 and H4C2(Flu)2ZrCl2 gives completely separable mixts. of the isotactic and atactic polymers characteristic for each of the individual catalysts. MAO-activated mixts. of

Me<sub>2</sub>Si(2-Me-4-tert-Bu-C<sub>5</sub>H<sub>2</sub>)<sub>2</sub>ZrCl<sub>2</sub> and H<sub>4</sub>C<sub>2</sub>(Flu)<sub>2</sub>ZrCl<sub>2</sub>, however, give polypropene mixts. that contain, besides isotactic and atactic polymers, polymer fractions in which isotactic and atactic polypropene chain segments are inseparably linked. While clear evidence for isotactic-syndiotactic stereoblock formation was not obtained, some polymer exchange between isospecific and syndiospecific catalyst sites in MAO-activated mixts. of Me<sub>2</sub>Si(2-Me-4-tBu-C<sub>5</sub>H<sub>2</sub>)<sub>2</sub>ZrCl<sub>2</sub> and Ph<sub>2</sub>C(Cp)FluZrCl<sub>2</sub> is indicated by increased stereo error frequencies in some fractions of the polymer product mixture obtained by temperature-rising elution fractionation. Structural prerequisites for an efficient transfer of growing polymer chains between different types of catalyst centers are discussed.

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 59 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:784375 CAPLUS  
DN 133:350701  
TI Supported ionic polymerization catalyst compositions  
IN Vizzini, James C.; Chudgar, Rajan K.  
PA Exxon Chemical Patents, Inc., USA  
SO U.S., 10 pp., Cont.-in-part of U.S. 5,972,823.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6143686	A	20001107	US 1998-184389	19981102 <--
	US 5643847	A	19970701	US 1995-474948	19950607 <--
	US 5972823	A	19991026	US 1997-776738	19970714 <--
	WO 2000026266	A1	20000511	WO 1999-US25650	19991102 <--
	W: CA, CN, JP, KR, MX, SG				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1127082	A1	20010829	EP 1999-956828	19991102
	EP 1127082	B1	20050119		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	US 1994-285380	B2	19940803		
	US 1995-474948	A2	19950607		
	US 1997-776738	A2	19970714		
	WO 1995-US9578	W	19950728		
	US 1998-184389	A	19981102		
	WO 1999-US25650	W	19991102		
OS	MARPAT 133:350701				
GI					



AB This invention relates to supported metallocene catalyst compns. useful for addition reactions of prochiral  $\alpha$ -olefins. Polymers, specifically propylene polymers, produced with this catalyst possess higher stereoregularities and consequently higher m.ps. compared to propylene polymers produced using previously known supported metallocene catalysts. The microstructure of the polymers obtained using the supported catalyst systems of this invention is similar to that obtained using analogous unsupported catalysts. The catalyst compns. comprise transition metal (i.e., metallocene) cations and beam comprising anionic activators in prescribed ratios on metal or metalloid oxide supports. The transition metal compound is represented by I, wherein M = Ti, Zr, Hf, V, niobium, Ta, Cr, Mo and W; R1, R2 = H, C1-10 alkyl group, C1-10 alkoxy group, C6-10 aryl group, C6-10 aryloxy group, halogen, etc.; R5, R6 = halogen atom, C1-10 alkyl group which may be halogenated, C6-10 aryl group which may be halogenated, C2-10 alkenyl group, C7-40 -arylalkyl group, NR215, SR15, OR15, OSiR153, PR152, etc., wherein R15 = halogen atom, a C1-10 alkyl group, C6-10 aryl group; R7 = M2R11R12, M2R11R12M2R11R12, M2R11R12(CR132), OM2R11R12O, CR11R12, OM2R11R12, B(R11), Al(R11), Ge, Sn, O, S, SO, SO2, N(R11), CO, P(R11), or P(O)(R11) wherein: R11-13 = H, halogen atom, C1-20 alkyl group, C1-20 fluoroalkyl group, etc., or R11 and R12, or R11 and R13, together with the atoms binding them, can form ring systems; M2 = Si, Ge, Sn; m, n = 0-2; R3, R4, R10 = R11-13 or can form a ring.

RE.CNT 3        THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 60 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:772639 CAPLUS  
DN 133:335647  
TI Organoalanes, their production and their use as catalysts for  
polymerization of olefins  
IN Schottek, Jorg; Becker, Patricia  
PA Targor G.m.b.H., Germany  
SO PCT Int. Appl., 69 pp.  
CODEN: PIXXD2  
DT Patent  
LA German

FAN.CNT 1					
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----					
PI	WO 2000064906	A1	20001102	WO 2000-EP3315	20000413 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	DE 19917984	A1	20001109	DE 1999-19917984	19990421 <--
	AU 2000041181	A5	20001110	AU 2000-41181	20000413 <--
	EP 1175424	A1	20020130	EP 2000-920700	20000413
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002543082	T2	20021217	JP 2000-614257	20000413
PRAI	DE 1999-19917984	A	19990421		
	WO 2000-EP3315	W	20000413		

AB Organoalanes are prepared from trialkylalanes and fluoroarom. compds. and used as cocatalysts for the metallocene polymerization of olefins. The produced alanes make it possible to attain a high degree of catalyst activity while forgoing the use of aluminoxanes, such as Me aluminoxanes, as a cocatalyst. Thus, Me3Al was condensed with pentafluorophenol to give bis(pentafluorophenoxy)(methyl)alane, which was used along with dimethylsilanediylbis(2-methyl-4-phenylindenyl)zirconium dichloride in the polymerization of propylene; a polymerization activity of 2.6 kg polypropylene/g metallocene/h was noted.

RE.CNT 16        THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 61 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:756606 CAPLUS  
 DN 133:322298  
 TI Olefin polymerization catalyst system and its use  
 IN Schottek, Jorg; Becker, Patricia  
 PA Targor G.m.b.H., Germany  
 SO PCT Int. Appl., 68 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000062928	A1	20001026	WO 2000-EP3263	20000412 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	DE 19917985	A1	20001026	DE 1999-19917985	19990421 <--
	BR 2000009871	A	20020108	BR 2000-9871	20000412
	EP 1175262	A1	20020130	EP 2000-926878	20000412
	EP 1175262	B1	20040218		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002542342	T2	20021210	JP 2000-612058	20000412
	AT 259675	E	20040315	AT 2000-926878	20000412
	ES 2215651	T3	20041016	ES 2000-926878	20000412
	ZA 2001008611	A	20021021	ZA 2001-8611	20011019
PRAI	DE 1999-19917985	A	19990421		
	WO 2000-EP3263	W	20000412		

OS MARPAT 133:322298  
 AB The invention relates to a catalyst system that consists of a metallocene, a cocatalyst, a substrate material, and optionally another organometallic compound. The catalyst system is advantageously used for the polymerization of olefins. The invention provides a catalyst system that achieves a high catalyst activity and good polymer morphol. while dispensing with aluminoxanes such as Me aluminoxane (MAO) as a cocatalyst. Examples of propylene polymerization were given using a Zr metallocene on SiO<sub>2</sub> in addition to organoaluminum compds.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 62 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:754490 CAPLUS  
 DN 133:322294  
 TI Metallocene catalyst-promoter systems, their preparation and use in olefin polymerization  
 IN Chang, Main  
 PA Exxon Chemical Patents, Inc., USA  
 SO U.S., 15 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6136742	A	20001024	US 1997-861902	19970522 <--
	US 6184170	B1	20010206	US 2000-565854	20000505
PRAI	US 1996-26946P	P	19960924		
	US 1997-861902	A3	19970522		

OS MARPAT 133:322294  
 AB Catalyst promoters for example, styrene or substituted styrene increase the activity of the metallocene catalyst systems. The catalyst systems can be supported. Thus, propylene was polymerized at 70° in the



presence of rac-dimethylsilylbis(2-methyl-4-phenylindenyl) zirconium dichloride, alumoxane, and styrene at promoter/metallocene ratio 13.7 to give polypropylene at catalyst activity 2670 g/g-h; vs. 1720 g/g-h when no styrene was used.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 63 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:748315 CAPLUS  
DN 134:17784  
TI Studies on metallocene catalyzed copolymers of ethylene with 10-undecen-1-ol  
AU Starck, P.; Lofgren, B.  
CS Polymer Science Centre, Helsinki University of Technology, Espoo, FIN-02151, Finland  
SO Journal of Materials Science (2000), 35(17), 4439-4447  
CODEN: JMTSAS; ISSN: 0022-2461  
PB Kluwer Academic Publishers  
DT Journal  
LA English  
AB Ethylene was copolymerized with 10-undecen-1-ol in the presence of four different zirconocene catalyst systems. The copolymers were characterized by DSC and by dynamic mech. anal. (DMA). It was demonstrated that properties of the catalysts used affected the crystallization behavior of the copolymers because the catalysts exhibited differences in conversions of the polar comonomer. The step crystallization technique using DSC provided useful information about the differences in comonomer incorporation in the chain. The formation of multiple peaks, based on differences in ethylene sequence length, is much weaker for the copolymers produced with a non-bridged metallocene, than for polymers produced with bridged catalysts. A study of the crystallization rates in nonisothermal expts. exhibited a small decrease in crystallization temps. with increasing branching. The Hoffman-Weeks extrapolation of m.p. vs crystallization temperature gave reasonable results for silylene-bridged copolymers. In DMA, study was made of the storage modulus as an indicator of stiffness and loss tangent as a measure of the effect of branching on the  $\beta$ -relaxations. The DMA measurements indicated a slight increase in the flexural modulus, or stiffness values, of the copolymers relative to the corresponding homopolymers. The damping curves did not show any peaks in the  $\beta$ -relaxation range, which indicates that the amount of short branching in the copolymers is negligible.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 64 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:725682 CAPLUS  
DN 133:297527  
TI Ethylene- $\alpha$ -olefin-unconjugated polyene copolymer rubbers, their compositions and moldings for seals, and manufacture of moldings therefrom  
IN Koda, Taku; Kawasaki, Masaaki  
PA Mitsui Chemicals, Inc., Japan  
SO PCT Int. Appl., 66 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000059962	A1	20001012	WO 2000-JP1967	20000329 <--
	W: CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1088836	A1	20010404	EP 2000-912928	20000329
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	US 6410650	B1	20020625	US 2000-701304	20001128
PRAI	JP 1999-96475	A	19990402		
	WO 2000-JP1967	W	20000329		
AB	Title rubbers are prepared from C <sub>2</sub> H <sub>4</sub> , C <sub>3</sub> -20 $\alpha$ -olefins, and unconjugated polyenes and show (a) intrinsic viscosity ( $[\eta]$ ,				

135°, in Decalin) of 1.5-5.0 dL/g, (b)  $\eta^*$  and/or  $g'$  value ( $\eta^* = [\eta]/[\eta_0]$  with  $[\eta_0]$  = intrinsic viscosity of linear 70:30 mol% C<sub>2</sub>H<sub>4</sub>-C<sub>3</sub>H<sub>6</sub> copolymer [I] having a light-scattering method-measured weight-average mol. weight same as that of the rubber;  $g' = [\eta]/[\eta']$  with  $[\eta']$  = intrinsic viscosity of I with a GPC-measured weight-average mol. weight same as that of the rubber) of 0.6-0.9. (c) polydispersity  $M_w/M_n$  of 3.0-50, (d) I<sub>2</sub> value of 10-40, (e) C<sub>2</sub>H<sub>4</sub>/olefin of 40-95:5-60, (f) intensity ratio (R<sub>i</sub>) of  $T_{\alpha\beta}/T_{\alpha\alpha}$  in <sup>13</sup>C-NMR spectra of  $\leq 0.5$ . Mixing 60 parts C<sub>2</sub>H<sub>4</sub>-C<sub>3</sub>H<sub>6</sub>-ethylidenenorbornene copolymer (II) showing C<sub>2</sub>H<sub>4</sub>/C<sub>3</sub>H<sub>6</sub> 62:38, I<sub>2</sub> value 30 g/100 g,  $[\eta]$  1.6 dL/g,  $\eta^*$  0.9,  $M_w/M_n$  2.2, and R<sub>i</sub>  $< 0.01$  and 40 parts II showing C<sub>2</sub>H<sub>4</sub>/C<sub>3</sub>H<sub>6</sub> 72:28, I<sub>2</sub> value 22 g/100 g,  $[\eta]$  4.5 dL/g,  $\eta^*$  0.85,  $M_w/M_n$  2.4, and R<sub>i</sub>  $< 0.01$ , kneading with additives and fillers, and rolling with vulcanizers gave a sponge rubber with compression set 31% and shape retention 87%.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 65 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:718243 CAPLUS  
DN 133:296865  
TI Synthesis and use of (polyfluoroaryl)fluoroanions of aluminum, gallium and indium as polymerization cocatalysts  
IN Marks, Tobin J.; Chen, You-Xian  
PA Northwestern University, USA  
SO U.S., 11 pp., Cont.-in-part of U.S. Ser. No. 222,326.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6130302	A	20001010	US 1999-329711	19990610 <--
	US 5854166	A	19981229	US 1997-912617	19970818 <--
	US 6229034	B1	20010508	US 2000-633987	20000808
PRAI	US 1996-24190P	P	19960819		
	US 1997-912617	A1	19970818		
	US 1998-222326	A2	19981229		
	US 1999-329711	A3	19990610		
OS	MARPAT 133:296865				
AB	Salts of (polyfluoroaryl)fluoroanions of Al, Ga, and In are use in polymerization reactions of olefins. The (polyfluoroaryl)fluoroanions are [ER'RR'F].sup..crlbar., where E = Al, Ga, or In, and R1, R2, and R3 = fluorinated Ph, fluorinated biphenyl, or fluorinated polycyclic group. Thus, ethylene was polymerized in the presence of Cp'2ZrMe+.PBA- (PBA = tris(2,2',2"-nonafluorobiphenyl)fluoroaluminate) at 25° to give polyethylene having polydispersity 4.6 and melt temperature 138°.				

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 66 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:700617 CAPLUS  
DN 134:5008  
TI Electrochemical potentials, optical transitions, and frontier orbitals of non-bridged and bridged bent sandwich zirconocene complexes  
AU Loukova, G. V.; Strelets, V. V.  
CS Institute of Problems of Chemical Physics, Russian Academy of Sciences, Moscow, 142432, Russia  
SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2000), 49(6), 1037-1039  
CODEN: RCBUEY; ISSN: 1066-5285  
PB Consultants Bureau  
DT Journal  
LA English  
AB A linear correlation between the electrochem. gap values ( $G = E_{ox} - E_{red}$ ) and the energies of optical transition in the UV-visible region was found and justified for nonbridged and bridged bent-sandwich zirconocene complexes  $R(\eta^5-L)2ZrX_2$ , where L = cyclopentadienyl (Cp), indenyl (Ind), fluorenyl (Flu); X = Cl, Me; the bridging group R = SiMe<sub>2</sub>, (CH<sub>2</sub>)<sub>2</sub>.

RE.CNT 39      THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9    ANSWER 67 OF 829    CAPLUS    COPYRIGHT 2005 ACS on STN  
AN    2000:699209    CAPLUS  
DN    133:267247  
TI    Olefin polymerization multistage dual catalyst process  
IN    Cribbs, Leonard V.; Etherton, Bradley P.; Mack, Mark P.; Meas, James H.,  
Jr.  
PA    Equistar Chemicals, LP, USA  
SO    U.S., 8 pp.  
CODEN: USXXAM  
DT    Patent  
LA    English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6127484	A	20001003	US 1999-302059	19990429 <--
PRAI	US 1999-302059		19990429		

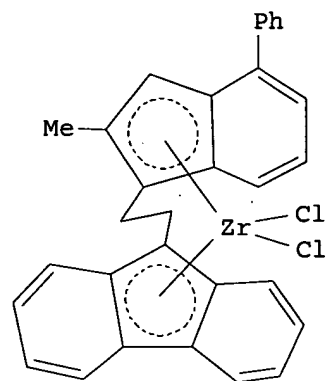
AB    A single-site catalyst, preferably one that contains a heteroatom ligand, is used in the first stage or polymerization zone without aluminoxane activator (which can deactivate the second stage catalyst), and a Ziegler-Natta catalyst is used at a higher temperature in later stages or zones, or in a parallel multiple zone process. The processes, which can be performed adiabatically, give polymers with improved thermal processing ability as reflected by melt flow index, MI2 (ASTM D-1238), 0.5-300 dg/min, and d. ltorsim.0.98 g/mL. Thus, an example two stage process using single-site catalyst in stage 1 at 140° and Ziegler-Natta catalyst in stage 2 at 165° gave a polyethylene composition having MI2 3 and d. 0.962 g/mL.

RE.CNT 15      THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9    ANSWER 68 OF 829    CAPLUS    COPYRIGHT 2005 ACS on STN  
AN    2000:695726    CAPLUS  
DN    133:362807  
TI    Electrochemical versus optical insight in frontier orbitals of Ti(IV), Zr(IV), and Hf(IV) bent metallocenes  
AU    Loukova, Galina V.; Strelets, Vladimir V.  
CS    Institute of Problems of Chemical Physics, Russian Academy of Sciences, Moscow, 142432, Russia  
SO    Journal of Organometallic Chemistry (2000), 606(2), 203-206  
CODEN: JORCAI; ISSN: 0022-328X  
PB    Elsevier Science S.A.  
DT    Journal  
LA    English  
AB    The linear relation between the redox and optical HOMO-to-LUMO electron transitions are reported for complex mols. with  $\pi$ -ligands for the 1st time. Linear correlations between electrochem. (redox) gaps and absorption charge-transfer energies were noted for Ti(IV), Zr(IV), and Hf(IV) bis(cyclopentadienyl) dichlorides. A similar correlation was also observed for the 4th ionization potentials of the corresponding Group IVB metals. The correlation between absorption charge-transfer energies and redox gaps was justified for ansa- and unbridged zirconocene dichlorides and dimethyls with variable sandwich ligands.

RE.CNT 42      THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9    ANSWER 69 OF 829    CAPLUS    COPYRIGHT 2005 ACS on STN  
AN    2000:691625    CAPLUS  
DN    134:17557  
TI    New C1 Symmetric Ziegler-Natta Type Zirconocenes for the Production of Isotactic Polypropylene  
AU    Thomas, Emma J.; Rausch, Marvin D.; Chien, James C. W.  
CS    Department of Chemistry, University of Massachusetts, Amherst, MA, 01003, USA  
SO    Organometallics (2000), 19(20), 4077-4083  
CODEN: ORGND7; ISSN: 0276-7333  
PB    American Chemical Society  
DT    Journal



I

AB Three new zirconocenes bearing 2,4-disubstitution on the indenyl moiety, e.g., I, were synthesized and evaluated as  $\alpha$ -olefin polymerization catalysts. For the new complex ethylene-1-(9-fluorenyl)-2-[1-(2-methyl-4-phenyl)indenyl]zirconium dichloride (I), highly isotactic polypropylene with [mmmm] = 91% and  $M_w$  1.1 + 105 at  $T_p$  = 40° was produced in very high yield. The dimethylsilylene analog (13) gave similar results in terms of stereoregularity with a 2-fold increase in  $M_w$ . In addition, dimethylsilylene(9-fluorenyl)[1-(2,4-dimethyl)indenyl]zirconium dichloride (12) was prepared and is an effective catalyst precursor, although the smaller Me substituent at the 4-position resulted in polypropylenes of lower stereoregularity.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 70 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:677410 CAPLUS

DN 133:252867

TI Olefin polymerization and montmorillonite-supported transition metal catalysts therefor

IN Sato, Haruhito; Kuramoto, Masahiko

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000264913	A2	20000926	JP 1999-72174	19990317 <--
PRAI	JP 1999-72174		19990317		

OS MARPAT 133:252867

AB The catalysts comprise Group IVB-VIB or Group VIII transition metal complexes and (organosilane-modified) montmorillonites whose IR absorption spectra satisfy  $I_2/I_1$  ( $I_1$ ,  $I_2$  = absorption intensity of the maximum peak in 905-925 and that in 835-855  $\text{cm}^{-1}$ , resp.) 0.05-0.45. The productivity and activity of the catalysts are improved. Thus, a Na-exchanged montmorillonite (BEN-GEL,  $I_2/I_1$  0.26) was modified with  $\text{MgCl}_2$ , slurried, treated with an aqueous HCl solution under relaxing, filtered, slurried again with (i-Bu) $_3\text{Al}$  (I), and mixed with dicyclopentadienylzirconium dichloride to give a catalyst. Then, ethylene was polymerized at 70° in the presence of the catalyst and I to give a polyethylene at catalyst activity 1770 g/g-catalyst/h and 195 kg/g-Zr/h.

L9 ANSWER 71 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:674687 CAPLUS

DN 133:223175

TI Composite catalyst system for synthesizing (co)polyethylene having bimodal or broad molecular weight distribution

PA China Petrochemical Corp., Peop. Rep. China

SO Fr. Demande, 23 pp.

CODEN: FRXXBL

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2788059	A1	20000707	FR 1999-16793	19991230 <--
	FR 2788059	B1	20031017		
	CN 1258682	A	20000705	CN 1998-126384	19981230 <--
	CN 1096474	B	20021218		
	GB 2345489	A1	20000712	GB 1999-30485	19991224 <--
	GB 2345489	B2	20020501		
	US 6387839	B1	20020514	US 1999-474014	19991228
	KR 2000048466	A	20000725	KR 1999-64650	19991229 <--
PRAI	CN 1998-126384	A	19981230		

OS MARPAT 133:223175

AB The title catalysts comprise a solid catalyst containing metallocene compds. and Ti or V compound non-metallocene compds. and an organoaluminum compound and/or an aluminoxane.

L9 ANSWER 72 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:658510 CAPLUS

DN 133:252877

TI Process and catalysts for production of syndiotactic-atactic polypropylene alloys and isotactic-atactic polypropylene alloys for thermoplastic elastomers

IN Chien, James C. W.

PA Academy of Applied Science, USA; Rines and Rines

SO U.S., 16 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6121377	A	20000919	US 1998-151227	19980910 <--
PRAI	US 1998-151227		19980910		

AB A compatible polyolefin alloy comprises two homopolymers An and Bm derived from the same monomer having dissimilar stereoisomeric structures and a block copolymer of the formula (AaBb)x, wherein n and m are integers from 1,000 to 30,000, a and b are integers from 10 to 1,000, and x is an integer from 1 to 100, wherein the polyolefin alloy has a weight ratio of An. and Bm between 100 to 1 and 1 to 100 and the block copolymer (Aa Bb)x is between 2 and 20% by weight Processes for preparing naturally compatibilized polyolefin alloys use a "one-pot" polymerization of a single monomer (preferably propylene), whereby two homopolymers having different stereoisomeric structures are produced (preferably stereoregular and stereoirregular), as well as a third block copolymer having alternating sequences of the two structural segments of the two homopolymers. Catalyst compns. are used enabling the direct synthesis of naturally compatibilized polymer blends comprising for components: two organometallic complexes of group IVB elements, a catalyst which irreversibly reacts with at least one ligand on the transition metal complexes converting it to catalytically active state, and a hydrocarbyl, substituted hydrocarbyl, or oxyhydrocarbyl compound of Group IIA, IIB, and IIIA metals, which functions as a cross-over agent.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 73 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:653981 CAPLUS

DN 133:322470

- TI Study on propylene isospecific polymerization using supported metallocene catalyst  $\text{rac-Me}_2\text{Si(Ind)}_2\text{ZrCl}_2$
- AU Zhu, Yinbang; Xu, Juntong; Fan, Zhiqiang; Feng, Linxian
- CS Dep. Polymer Sci. Eng., Zhejiang Univ., Hangzhou, 310027, Peop. Rep. China
- SO Gaofenzi Xuebao (2000), (4), 443-447
- CODEN: GAXUE9; ISSN: 1000-3304
- PB Kexue Chubanshe
- DT Journal
- LA Chinese
- AB A highly active supported metallocene catalyst for propylene isospecific polymerization was prepared by immobilization of  $\text{SiO}_2$  with precontacted compds. of  $\text{rac-Me}_2\text{Si(Ind)}_2\text{ZrCl}_2$  and methylaluminoxane (MAO). The influence of  $[\text{Al}]/[\text{Zr}]$  ratio and polymerization temperature on the activity, mol. weight (MW) and polymerization kinetics was investigated. The behavior of this catalyst was also compared with its corresponding homogeneous catalytic system. It was demonstrated that the active site of heterogeneous systems was more stable, and the MW of the obtained polymer improved apparently in parallel. The microstructure of iPP produced by two types of catalysts was determined by  $^{13}\text{C}$ -NMR spectra. The isotacticity of iPP obtained by heterogeneous systems was higher, its pentad sequence [mmmm] increased to 86.3% from 82.0% for homogeneous systems. Moreover, the regioselectivity of polymers produced by heterogeneous systems was also improved, the 2,1-insertion and 1,3-insertion decreased to 0.37% and 0.05% from the values of 0.44% and 0.19%, resp. for those produced by homogeneous systems.
- L9 ANSWER 74 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN
- AN 2000:629308 CAPLUS
- DN 133:322195
- TI Copolymerization of ethylene and cycloolefin with metallocene catalyst: I. Effect of catalyst
- AU Lee, Dong-Ho; Jung, Hee-Kyung; Kim, Woo-Sik; Min, Kyung-Eun; Park, Lee-Soon; Seo, Kwan-Ho; Kang, Inn-Kyu; Noh, Seok-Kyun
- CS Department of Polymer Science, Kyungpook National University, Taegu, S. Korea
- SO Polymer (Korea) (2000), 24(4), 445-452
- CODEN: POLLDG; ISSN: 0379-153X
- PB Polymer Society of Korea
- DT Journal
- LA Korean
- AB The copolymn. of ethylene (E) and norbornene (N) was examined by using various metallocene catalysts and modified-methylaluminoxane (MMAO) cocatalyst. For C<sub>2</sub>-symmetry catalysts such as  $\text{rac-Et(Ind)}_2\text{ZrCl}_2$ ,  $\text{Me}_2\text{Si(Ind)}_2\text{ZrCl}_2$ ,  $\text{Me}_2\text{Si(Cp)}_2\text{ZrCl}_2$  and Cs-sym. isopropylidene(FluCp)ZrCl<sub>2</sub> as well as CGC and di-bridged zirconocene, the effects of catalyst structure and  $[\text{N}]/[\text{E}]$  feed ratio on catalyst activity, thermal property and  $[\text{N}]$  content of copolymer (COC) were investigated. For  $\text{rac-Et(Ind)}_2\text{ZrCl}_2$  catalyst and a constant  $[\text{N}]/[\text{E}]$  feed ratio, the appropriate conditions of  $[\text{Al}]/[\text{Zr}]$  mole ratio, polymerization temperature and cocatalyst structure were 3000, 40°C, MMAO cocatalyst, resp. As  $[\text{N}]/[\text{E}]$  feed ratio increased, the incorporation of norbornene to the copolymer increased while the activity of catalyst decreased except for isopropylidene(FluCp)ZrCl<sub>2</sub>. With consideration of catalyst activity as well as N content, it was found that  $\text{rac-Et(Ind)}_2\text{ZrCl}_2/\text{MMAO}$  system exhibited relatively high activity and controllable Tg. The monomer reactivity ratio was determined by Kelen-Tudos method.
- L9 ANSWER 75 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN
- AN 2000:617758 CAPLUS
- DN 133:335499
- TI The synthesis of isotactic polypropylene with spherical morphology via supported metallocene catalyst
- AU Hong, Han; Yan, Wei Dong; Zhang, Ming Ge; Zhou, Nai; He, Da Wei; Hu, You Liang
- CS State Key Lab of Engineering Plastics, Center for Molecular Science, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
- SO Chinese Chemical Letters (2000), 11(8), 745-746
- CODEN: CCLEE7; ISSN: 1001-8417
- PB Chinese Chemical Society

DT Journal  
LA English  
AB Propylene was polymerized in bulk at 70° using supported metallocene catalysts prepared from four kinds of SiO<sub>2</sub> as carrier. Triethylaluminum was used as a co-catalyst. The morphol. of the products was studied by SEM. The property of the carriers had a significant effect on the fine structure of the polymer products as well as their appearance.  
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 76 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:614297 CAPLUS  
DN 133:321963  
TI Synthesis of [μ-methylenebis(η<sup>5</sup>-3-tert-butyl-2-methylinden-1-yl)]dichlorozirconium(IV)  
AU Ivchenko, N. B.; Ivchenko, P. V.; Nifant'ev, I. E.; Kotov, V. V.  
CS Department of Chemistry, M. V. Lomonosov Moscow State University, Moscow, 119899, Russia  
SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2000), 49(5), 942-945  
CODEN: RCBUEY; ISSN: 1066-5285  
PB Consultants Bureau  
DT Journal  
LA English  
OS CASREACT 133:321963  
AB An efficient synthetic approach to 3-alkyl(aryl)-2-bromoindenes was developed. The reaction of 2-bromo-3-tert-butylindene with MeMgI catalyzed by Ni(dppp)Cl<sub>2</sub> afforded 3-tert-butyl-2-methylindene from which bis(3-tert-butyl-2-methylinden-1-yl)methane and the corresponding ansa-zirconocene were synthesized.  
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 77 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:610017 CAPLUS  
DN 133:310152  
TI Transfer and isomerization reactions in propylene polymerization with the isospecific, highly regiospecific rac-Me<sub>2</sub>C(3-t-Bu-1-Ind)<sub>2</sub>ZrCl<sub>2</sub>/MAO catalyst  
AU Camurati, Isabella; Fait, Anna; Piemontesi, Fabrizio; Resconi, Luigi; Tartarini, Stefano  
CS Montell Polyolefins, Centro Ricerche G. Natta, Ferrara, 44100, Italy  
SO ACS Symposium Series (2000), 760 (Transition Metal Catalysis in Macromolecular Design), 174-193  
CODEN: ACSMC8; ISSN: 0097-6156  
PB American Chemical Society  
DT Journal; General Review  
LA English  
AB The influence of polymerization temperature, propylene concentration and hydrogen on the polymerization performance of the isospecific, highly regiospecific rac-Me<sub>2</sub>C(3-t-Bu-1-Ind)<sub>2</sub>ZrCl<sub>2</sub> / MAO (1/MAO) catalyst has been reviewed with 56 refs. Propagation follows the rate law  $R_p = (a[M] + b[M]^2) / (c + d[M])$ . 1/MAO is more stereospecific compared to unsubstituted bisindenyl complexes, e.g. rac-C<sub>2</sub>H<sub>4</sub>(1-Ind)<sub>2</sub>ZrCl<sub>2</sub> / MAO (2/MAO), but growing-chain-end isomerization (epimerization) is faster in 1/MAO (ca 10% of stereoerrors of type mrrm are due to epimerization in liquid monomer at 50°C) than in 2/MAO. 1H NMR end group anal. shows that chain transfer occurs by β-Me (prevalent) and β-hydrogen transfer reactions.  
RE.CNT 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 78 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:608786 CAPLUS  
DN 133:193624  
TI Olefin polymerization process  
IN Follestad, Arild; Almqvist, Vidar; Andersen, Ketil Strand; Blom, Richard; Dahl, Ivar Martin; Andersen, Arild Geir  
PA Borealis Technology Oy, Finland; Cockbain, Julian  
SO PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000050466	A1	20000831	WO 2000-GB623	20000222 <--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, VZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1165622	A1	20020102	EP 2000-905181	20000222
	EP 1165622	B1	20030409		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AT 236934	E	20030415	AT 2000-905181	20000222
	US 6610799	B1	20030826	US 2001-913529	20011024
PRAI	GB 1999-4044	A	19990222		
	NO 1999-834	A	19990222		
	WO 2000-GB623	W	20000222		

AB A process for olefin polymerization in a reaction vessel comprises polymerizing at least one  $\alpha$ -olefin in a polymerization stage employing a catalyst feed comprizing 1) a first catalyst composition having at least two active catalytic sites capable of producing a first set of polymer components; 2) a second catalyst composition having at least two active catalytic sites capable of giving essentially the same set of polymer components as produced by the catalyst in feed (1) under the same polymerization conditions but these components in a different ratio to those produced by the catalyst composition of feed (1); wherein the amts. of catalyst compns. (1 and 2) fed into the reaction vessel are independently controlled. Ethylene and 1-hexene were polymerized using a mixed catalyst system comprizing bis(butylcyclopentadienyl)zirconium dichloride, dimethylsilylenebis(2-Me,4-phenylindenyl)zirconium dichloride, and methylaluminumoxane.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 79 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:606880 CAPLUS  
DN 133:177668  
TI Static control in olefin polymerization  
IN Goode, Mark Gregory; Williams, Clark Curtis; Hussein, Fathi David; McNeil, Thomas James; Lee, Kiu Hee  
PA Union Carbide Chemicals & Plastics Technology Corporation, USA  
SO U.S., 13 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6111034	A	20000829	US 1998-224036	19981231 <--
PRAI	US 1998-224036		19981231		

AB Addition of water to a gas phase olefin polymerization reactor in amts. > 3 ppmv permits an increase in the level of condensable gas and facilitates operation of the reactor at an elevated dew point by ameliorating electrostatic phenomena in the reactor, thus inhibiting sheeting; water is fed into the system to inhibit formation of static. Typically, ethylene is (co)polymerized in a fluidized bed reactor containing a metallocene/aluminumoxane polymerization catalyst.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 80 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:602558 CAPLUS



DN 133:363003  
TI EP(D)M-synthesis with highly active homogeneous and heterogeneous metallocene/MAO-catalysts  
AU Arrowsmith, D.; Kaminsky, W.; Schauwienold, A.-M.; Weingarten, U.  
CS Institute for Technical and Macromolecular Chemistry, University of Hamburg, Hamburg, D-20146, Germany  
SO Journal of Molecular Catalysis A: Chemical (2000), 160(1), 97-105  
CODEN: JMCCF2; ISSN: 1381-1169  
PB Elsevier Science B.V.  
DT Journal  
LA English  
AB Copolymns. of ethene and propene were carried out either with the soluble catalyst systems dimethylsilylbis(2-methyl-4-phenylindenyl)zirconium dichloride/Me aluminoxane (MAO) (I), isopropylidenecyclopentadienylfluorenylzirconium dichloride/MAO (II) and isopropylidene(3-methylcyclopentadienyl)fluorenylzirconium dichloride/MAO (III) in toluene or with the supported metallocenes I/SiO<sub>2</sub>, II/SiO<sub>2</sub>, and III/SiO<sub>2</sub> in the gas phase. Furthermore, terpolymns. of ethene, propene, and 5-ethylidene-2-norbornene were performed with the homogeneous system III and with the heterogeneous system III/SiO<sub>2</sub> in the gas phase. The phys. and chemical properties of the resulting polymers were compared in order to examine the behavior of the metallocenes when supported. In general, they work in much the same way as their soluble counterparts and the synthesis of EP(D)M co(ter)polymers with the above mentioned metallocenes can easily be transferred to gas phase processes.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 81 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:594287 CAPLUS  
DN 133:310214  
TI Long chain branched polypropylene via macromer incorporation  
AU Weng, Weiqing; Markel, Eric J.; Dekmejian, Armenag H.  
CS Baytown Polymers Center, ExxonMobil Chemical Company, Baytown, TX, 77522, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(2), 1924-1925  
CODEN: ACPPAY; ISSN: 0032-3934  
PB American Chemical Society, Division of Polymer Chemistry  
DT Journal  
LA English  
AB It was demonstrated that long-chain branched (LCB) polypropylene can be made through macromer incorporation with metallocene catalysts. The LCB polymers incorporating polyethylene macromers were characterized by spectroscopic methods, while the those incorporating PP macromers were characterized using GPC-MALLS and extensional viscometry. The LCB polymers have enhanced melt properties such as strain hardening and shear thinning.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 82 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:594285 CAPLUS  
DN 133:322171  
TI C2-symmetric zirconocenes for high molecular weight amorphous polypropylene  
AU Balboni, D.; Moscardi, G.; Nifant'ev, I.; Baruzzi, G.; Angeli, D.; Resconi, L.  
CS Montell Polyolefins, Centro Ricerche G. Natta, Ferrara, 44100, Italy  
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(2), 1920-1921  
CODEN: ACPPAY; ISSN: 0032-3934  
PB American Chemical Society, Division of Polymer Chemistry  
DT Journal  
LA English  
AB We have reported new examples of chiral C2-sym. zirconocenes of low stereoselectivity. Zirconocenes, upon activation with Me aluminoxane, produce amorphous polypropylenes with acceptable mol. wts. at practical

polymerization temps. and mmmm pentad values between 15 and 30 %. Non-bonded interaction anal. by Mol. Mechanics accounts for the low enantioselectivity of these zirconocenes, and predicts the isospecificity of the rac-H<sub>2</sub>C(2-Me-3-iPr-1-Ind)ZrR' catalyst. Interestingly, while polypropylene from zirconocene/MAO is fully amorphous, the polypropylene from another zirconocene/MAO has elastomeric properties at room temperature and, upon ageing, develops some crystallinity. The properties of these materials are being actively investigated. These zirconocenes can be prepared in three steps from inexpensive starting materials. These complexes are simpler in their synthesis compared to the Cl-sym. metallocenes previously reported for the production of similar polypropylene materials.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 83 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:594276 CAPLUS  
DN 133:310212  
TI The synthesis and properties of double bond terminated isotactic polypropylene  
AU Fu, Peng-Fei; Glover, Shedric; King, Russell K.; Lee, Chi-Long; Pretzer, Maria R.; Tomalia, Mary Kay  
CS Central Research & Development, Dow Corning Corporation, Midland, MI, 48686, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(2), 1903-1904  
CODEN: ACPPAY; ISSN: 0032-3934  
PB American Chemical Society, Division of Polymer Chemistry  
DT Journal  
LA English  
AB The preparation of a qual. double bond capped isotactic polypropylene by eliminating the appropriate transfer processes was demonstrated. By the judicious selection of the polymerization conditions (polymerization temperature and propylene pressure) as well as the catalysts and cocatalysts, monovinylidene capped isotactic polypropylenes with various mol. wts., m.p., and isotacticity can be readily prepared

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 84 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:590036 CAPLUS  
DN 133:177692  
TI Synthesis of metallocenes and enrichment of their racemic isomer  
IN Shamsoum, Edwar Shoukri; Bauch, Christopher G.  
PA Fina Technology, Inc., USA  
SO U.S., 6 pp.  
CODEN: USXXAM  
DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6107501	A	20000822	US 1997-790783	19970130 <--
PRAI	US 1997-790783		19970130		

AB Synthesizing stereorigid metallocene having chiral center and enriching its racemic isomer content comprises (a) selecting cyclopentadienyl ring-containing compound (e.g., 2-methylindene) capable of forming metallocene with chiral center and dissolving compound in a solvent (e.g., hexane); (b) contacting the mixture with an alkyl alkali metal compound (e.g., Me<sub>2</sub>SiCl<sub>2</sub>); (c) dissolving the solid with a solvent (e.g., THF); (d) contacting the solution with suitable halogenated compound with which bridge between two cyclopentadienyl ring-containing compds. may be formed; (e) removing solvent, and, optionally, removing the residual starting compound; (f) dissolving the solid created in a solvent and contacting with a alkyl alkali metal compound; (g) removing solvent, and, optionally, removing the residual starting compound; (h) slurring or suspending the solid created with a solvent; (i) contacting the slurry or suspension with metal tetrahalide (e.g., ZrCl<sub>4</sub>) to react; (j) removing residual alkali halide from the solid

created; (k) removing solvent; (l) enriching racemic metallocene isomer using a solvent (e.g., toluene); (m) removing supernatant; (n) repeating enriching process; and (o) recovering the product.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 85 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:585482 CAPLUS  
DN 133:178455  
TI Transparent polypropylene sheets  
IN Nozokido, Yutaka; Yamamoto, Toshiki; Shiota, Tsutomu; Saito, Jun  
PA Chisso Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000230086	A2	20000822	JP 1999-31580	19990209 <--
PRAI	JP 1999-31580		19990209		
OS	MARPAT 133:178455				
AB	Title sheets are manufactured by using metallocene catalysts. Thus, dimethylsilylene(2,3,5-trimethylcyclopentadienyl)(2',4',5'-trimethylcyclopentadienyl)zirconium dichloride was reacted with methylaluminumoxane in PhMe and treated with silica, and prepolymerized with propylene to give a polymer, in the presence of which polypropylene was polymerized in hexane at 50° under 1.17 MPa to give a polymer with Mw/Mn 2.4 and mmmmm 0.940. A sheet prepared from the polymer showed Haze 46%.				

L9 ANSWER 86 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:585455 CAPLUS  
DN 133:178443  
TI Manufacture of extrusion-laminated films of propylene polymers  
IN Sato, Hitoshi; Shiota, Tsutomu; Saito, Jun  
PA Chisso Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000230017	A2	20000822	JP 1999-31581	19990209 <--
PRAI	JP 1999-31581		19990209		
OS	MARPAT 133:178443				
AB	The films are manufactured by using propylene polymers prepared with metallocene catalysts. Using the polymers improves high-speed processability. Thus, dimethylsilylene(2,3,5-trimethylcyclopentadienyl)(2',4',5'-trimethylcyclopentadienyl)zirconium dichloride and Me aluminumoxane were used in preparation of polypropylene (Mw 2.00 + 105, Mw/Mn 2.4, mmmmm 0.942), which was mixed with additives, pelletized, and laminated with kraft paper to show neck-in length 58 mm and processable speed 180 m/min.				

L9 ANSWER 87 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:563536 CAPLUS  
DN 133:297501  
TI Dual-Side ansa-Zirconocene Dichlorides for High Molecular Weight Isotactic Polypropylene Elastomers  
AU Kukral, Juergen; Lehmus, Petri; Feifel, Tanja; Troll, Carsten; Rieger, Bernhard  
CS Department for Materials and Catalysis, University of Ulm, Ulm, D-89069, Germany  
SO Organometallics (2000), 19(19), 3767-3775  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English

AB The four new asym. ansa-zirconocene dichlorides rac-[1-(9- $\eta$ 5-fluorenyl)-2-(2-phenyl-1- $\eta$ 5-indenyl)ethane]zirconium dichloride, rac-[(9- $\eta$ 5-fluorenyl)(5,6-cyclopenta-2-methyl-1- $\eta$ 5-indenyl)dimethylsilane]zirconium dichloride, rac-[(9- $\eta$ 5-fluorenyl)(2-methyl-1- $\eta$ 5-indenyl)dimethylsilane]zirconium dichloride, and rac-[(9- $\eta$ 5-fluorenyl)(2-phenyl-1- $\eta$ 5-indenyl)dimethylsilane]zirconium dichloride were prepared, and their polymerization behavior was compared to the recently published rac-[1-(9- $\eta$ 5-fluorenyl)-2-(5,6-cyclopenta-2-methyl-1- $\eta$ 5-indenyl)ethane]zirconium dichloride and rac-[1-(9- $\eta$ 5-fluorenyl)-2-(2-methyl-1- $\eta$ 5-indenyl)ethane]zirconium dichloride. The Si-bridged ligands are easily accessible by the reaction of fluorenyllithium with dimethyldichlorosilane and the subsequent addition of indenyllithium. A similar route using 1-(9-fluorenyl)-2-bromoethane was applied for the synthesis of the ethylene-bridged ligands. The Zr(IV) complexes of all ligands are highly active catalysts for the propene polymerization reaction after activation with MAO. The influence of the bridge and the particular substitution pattern of the indenyl fragments has been studied with respect to monomer concentration and polymerization temperature. The exchange of the ethylene bridge by a dimethylsilane unit results in a strong increase of the mol. wts. but also in a decreased polymerization activity deriving from a fast decomposition of the active catalyst species. Interestingly, significantly higher polymer mol. wts. could be found for the complexes that contain the 5,6-cyclopentyl substituent on the indenyl moiety. All catalysts showed the effect of a declining stereoselectivity with increasing monomer concentration, leading to the formation of homopolypropene elastomers. The mechanism of stereo-error formation of these C1-sym. species was investigated by deuterium labeling studies on the propene monomers and by comparison with C2-sym. complexes.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 88 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:545628 CAPLUS

DN 133:252782

TI Homopolymerization of 4-methyl-1-pentene and its copolymerization with ethylene in the presence of zirconocene catalysts

AU Ivanchev, S. S.; Badaev, V. K.; Ivancheva, N. I.; Budtov, V. P.; Khaikin, S. Ya.; Lemenovskii, D. A.

CS S.-Peterb. Fil., Inst. Kataliza im. G. K. Boreskova, Sib. Otd. Ross. Akad. Nauk, St. Petersburg, 197198, Russia

SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (2000), 42(2), 200-206

CODEN: VSSBEE; ISSN: 1023-3091

PB MAIK Nauka

DT Journal

LA Russian

AB Homopolymn. of 4-methyl-1-pentene and its copolymn. with ethylene in the presence of catalysts based on zirconocenes, [(CH<sub>3</sub>)<sub>5</sub>Cp]ZrCl<sub>3</sub>, [(CH<sub>3</sub>)<sub>2</sub>C(Cp)<sub>2</sub>]ZrCl<sub>2</sub>, [(CH<sub>3</sub>)<sub>2</sub>C(Ind)<sub>2</sub>]ZrCl<sub>2</sub>, [(C<sub>6</sub>H<sub>5</sub>)(C<sub>2</sub>H<sub>5</sub>)C(Ind)<sub>2</sub>]ZrCl<sub>2</sub>, [(CH<sub>3</sub>)<sub>2</sub>Si(Ind)<sub>2</sub>(Cp)<sub>2</sub>]ZrCl<sub>2</sub>, [(CH<sub>3</sub>)<sub>2</sub>C(CH<sub>3</sub>Cp)(Flu)]ZrCl<sub>2</sub>, and [(Ph)<sub>2</sub>C(Cp)(Flu)]ZrCl<sub>2</sub>, were studied. It was shown that the order of loading of the reagents affects the yield of poly(4-methyl-1-pentene). Unsym., bridged metallocenes exhibit the highest activity in polymerization. For the [(CH<sub>3</sub>)<sub>2</sub>C(CH<sub>3</sub>Cp)(Flu)]ZrCl<sub>2</sub>-methylaluminoxane system, formation of a syndiotactic poly(4-methyl-1-pentene) was observed. In the copolymn. of 4-methyl-1-pentene with ethylene, conditions providing preparation of a linear LDPE with a variable content of 4-methyl-1-pentene units were determined. The effect of the molar ratio of methylaluminoxane : Zr on the yield and composition of the resulting copolymer was revealed.

L9 ANSWER 89 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:535190 CAPLUS

DN 133:164481

TI Metallocenes containing ligands having heterocyclic rings for supported catalysts for polymerization of olefins

IN Schottek, Jorg; Kratzer, Roland; Winter, Andreas; Fraaije, Volker; Brekner, Michael-Joachim; Oberhoff, Markus

PA Targor G.m.b.H., Germany

SO PCT Int. Appl., 76 pp.

CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000044799	A1	20000803	WO 2000-EP471	20000122 <--
	W: BR, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19903306	A1	20000803	DE 1999-19903306	19990128 <--
	BR 2000004493	A	20001219	BR 2000-4493	20000122 <--
	EP 1082363	A1	20010314	EP 2000-910601	20000122
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002535416	T2	20021022	JP 2000-596054	20000122
	US 6469114	B1	20021022	US 2000-646176	20000914
PRAI	DE 1999-19903306	A	19990128		
	WO 2000-EP471	W	20000122		

OS MARPAT 133:164481

AB Metallocenes of Group IVB metals and containing indene derivative ligands bridged to bicyclic ligands having cyclopentadiene and heterocyclic rings containing  $\geq 1$  atom of Group IIIA, IVA, VA, or VIA are useful as supported catalysts for polymerization of olefins to give polymers with high m.p. and increased mol. weight A typical metallocene was manufactured by lithiation of dimethylsilanediyl(2-methyl-4-thiapentalene)[2-methyl-4-(4-tert-butylphenyl)indene] with BuLi and complexation with ZrCl<sub>4</sub>.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 90 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:532382 CAPLUS

DN 133:281861

TI General Synthesis of Racemic Me<sub>2</sub>Si-Bridged Bis(indenyl) Zirconocene Complexes

AU Zhang, Xingwang; Zhu, Qingming; Guzei, Ilia A.; Jordan, Richard F.

CS Department of Chemistry, The University of Iowa, Iowa City, IA, 52242, USA

SO Journal of the American Chemical Society (2000), 122(33), 8093-8094

CODEN: JACSAT; ISSN: 0002-7863

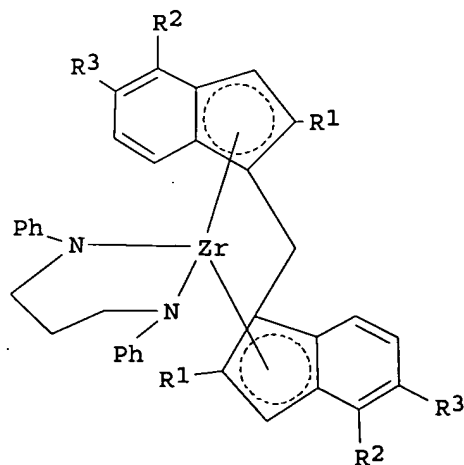
PB American Chemical Society

DT Journal

LA English

OS CASREACT 133:281861

GI



AB Racemic MeSi-bridged bis(indenyl) zirconocene complexes I (e.g., R1 = R2 = R3 = H) were prepared from Zr(PhNCH2CH2CH2NPh)Cl2(THF)2 (II) and Li2[SBI](Et2O) [SBI = (1-indenyl)2SiMe2] in Et2O at room temperature I (R1 = R2 = R3 = H) reacted further with ClSiMe3 and CD2Cl2 at 60° to stereoselectively give rac-(SBI)ZrCl2 only with no detectable amount of meso-(SBI)ZrCl2. I (R1 = Me, R2R3 = CH:CHCH:CH) and II were characterized by x-ray crystallog.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 91 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:513727 CAPLUS

DN 133:135725

TI Catalysts and process for producing olefin polymers with low molecular weight or silyl-terminated olefin polymers

IN Imuta, Jun-ichi; Matsumoto, Tetsuhiro

PA Mitsui Chemicals, Inc., Japan

SO PCT Int. Appl., 178 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000043426	A1	20000727	WO 2000-JP301	20000121 <--
	W: CA, JP, KR, US				
	RW: DE, FR, GB, IT, NL				
	CA 2325522	AA	20000727	CA 2000-2325522	20000121 <--
	EP 1092730	A1	20010418	EP 2000-900875	20000121
	EP 1092730	B1	20050323		
	R: DE, FR, GB, IT, NL				
	US 6583237	B1	20030624	US 2000-623679	20000907
PRAI	JP 1999-14621	A	19990122		
	WO 2000-JP301	W	20000121		

OS MARPAT 133:135725

AB The invention relates to a process for olefin polymer production in which an olefin polymer is obtained at a reduced hydrogen concentration or in the absence of hydrogen while attaining high catalytic activity; and a silyl-terminated olefin polymer obtained by the process in which a silane chain-transfer agent is used. The process is characterized by polymerizing an olefin in the presence of a catalyst comprising: (A) a compound of a Group III-X transition metal and (B) a compound selected among (B-1) organoalumoxy compds., (B-2) ionized ionic compds., and (B-3) organoaluminum compds. and of either (C) an organosilicon compound or (D) a dialkylzinc compound as chain-transfer agent and in the presence or absence of (E) hydrogen. (In the case where the hydrogen (E) is absent, the transition metal compound (A) must contain a ligand having a cyclopentadienyl skeleton). Thus, adding triisobutylaluminum 0.4, diethylzinc 0.05, Me aluminoxane 0.5 and dimethylsilylene[(2-methyl-4,5-benzo)-1-indenyl-9-(2,7-di-tert-butyl)fluorenyl]zirconium dichloride 0.0005 mmol to 400 mL decane, continuously feeding ethylene 100 N-L/h and H<sub>2</sub> 1 N-L/h while heating at 80° for 30 min, killing the reaction with 5 mL i-BuOH and working up gave a polyethylene with melt index 0.45 g/10 min at a catalyst activity 47.2 kg/mmol-Zr-h.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 92 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:513708 CAPLUS

DN 133:120812

TI Metallocene compounds as catalyst components for olefin polymerization

IN Mitani, Seiki; Nakano, Masato; Saito, Jun; Yamazaki, Hiroshi; Kimura, Keisuke

PA Chisso Corporation, Japan

SO PCT Int. Appl., 116 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000043406	A1	20000727	WO 2000-JP287	20000121 <--
	W: CN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6169051	B1	20010102	US 1999-236322	19990125
	US 6326493	B1	20011204	US 1999-449638	19991130
	EP 1066300	A1	20010110	EP 2000-900864	20000121
	EP 1066300	B1	20030820		
	R: BE, DE, FR				
	JP 2002535339	T2	20021022	JP 2000-594822	20000121
	JP 3674509	B2	20050720		
PRAI	US 1999-236322	A	19990125		
	US 1999-449638	A	19991130		
	WO 2000-JP287	W	20000121		
OS	MARPAT 133:120812				
AB	A metallocene compound is provided where a transition metal compound is bonded to a multidentate compound wherein a substituted cycloalkadienyl ring CA1 having therein a heteroarom. group Ra containing an oxygen, sulfur or nitrogen atom on a cycloalkadienyl ring, preferably the five-membered ring thereof, and an unsubstituted or substituted cycloalkadienyl group CA2 or -(R1)N-, -O-, -S- or -(R1)P-, preferably CA2, more preferably a substituted cycloalkadienyl group identical with CA1 are bonded through a divalent linking group. The metallocene compound is suitable as a principal ingredient of a catalyst for the polymerization of olefins, particularly achieving a very high effect in making the mol. weight of a polypropylene higher. Propylene was polymerized using dimethylsilylenebis[3-(2-furyl)-2,5-dimethyl-cyclopentadienyl]zirconium dichloride and aluminoxane catalysts.				
RE.CNT	6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD				
	ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L9	ANSWER 93 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN				
AN	2000:507131 CAPLUS				
DN	133:252487				
TI	Bis(Pentafluorophenyl)(2-perfluorobiphenyl)borane. A New Perfluoroarylborane Cocatalyst for Single-Site Olefin Polymerization				
AU	Li, Liting; Stern, Charlotte L.; Marks, Tobin J.				
CS	Department of Chemistry, Northwestern University, Evanston, IL, 60208-3113, USA				
SO	Organometallics (2000), 19(17), 3332-3337				
	CODEN: ORGND7; ISSN: 0276-7333				
PB	American Chemical Society				
DT	Journal				
LA	English				
AB	Bis(pentafluorophenyl)(2-perfluorobiphenyl)borane, (C6F5)2B(C12F9) (BPB), was synthesized and characterized to serve as a new strong organo-Lewis acid cocatalyst for single-site olefin polymerization. The mol. structure of BPB was determined by x-ray crystallog. anal. BPB efficiently activates a variety of Group 4 di-Me complexes to form highly active homogeneous Ziegler-Natta olefin polymerization catalysts. Reaction of BPB with Cp2ZrMe2, rac-Me2Si(Ind)2ZrMe2, and (CGC)MMe2 (M = Zr, Ti; CGC = Me2Si(η5-Me4C5)(tBuN)) (1:1 molar ratio) rapidly and cleanly produces the base-free cationic complexes Cp2ZrMe+[MeB(C12F9)(C6F5)2]- (1), rac-Me2Si(Ind)2ZrMe+[MeB(C12F9)(C6F5)2]- (2), and (CGC)MMe+[MeB(C12F9)(C6F5)2]- (M = Zr, 3; M = Ti, 4), resp. These complexes were characterized by NMR and elemental anal. and are competent for ethylene and propylene polymerization. In general, BPB-derived catalysts exhibit polymerization activities comparable to or higher than those of the B(C6F5)3-derived analogs, with the products exhibiting higher mol. wts. but comparable polydispersities, polypropylene isotacticities, and, for ethylene + 1-hexene, comonomer incorporation.				
RE.CNT	39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD				
	ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L9	ANSWER 94 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN				
AN	2000:484121 CAPLUS				
DN	133:105976				
TI	Crystalline α-olefin copolymer compositions as resin modifiers,				

thermoplastic resin compositions, and packaging moldings  
IN Mori, Akiji; Morizono, Kenichi; Kaneko, Kazuyoshi  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000198893	A2	20000718	JP 1999-298959	19991021 <--
PRAI	JP 1998-304518	A	19981026		

OS MARPAT 133:105976

AB The copolymer compns. contain (A) 100 parts crystalline ethylene-propylene-C4-20  $\alpha$ -olefin copolymers showing ethylene unit content 1-49 mol%, propylene unit content 50-98 mol%,  $\alpha$ -olefin unit content 1-49 mol%, heat of melting  $\geq 0.7$  J/g, intrinsic viscosity (at 135°, in decalin) 0.01-10 dL/g, and mol. weight distribution  $\leq 4$  and (B) 0.001-5 parts nucleating agents. Thus, ethylene, propylene, and 1-butene were polymerized in the presence of (i-Bu)<sub>3</sub>Al, dimethylsilylenebis(2-methyl-4-phenyl-1-indenyl)zirconium dichloride, and [Ph<sub>3</sub>C][B(C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>] to give a copolymer showing  $[\eta]$  1.9 dL/g, T<sub>g</sub> -31°, ethylene content 10 mol%, 1-butene content 19 mol%, and Mw/Mn 2.4. A composition comprising 40 parts Grand Polypro F 327BV and 60 parts composition comprising 100 parts of the copolymer and 1 part 1,3,2,4-di(p-methylbenzylidene)sorbitol showed elastic modulus 300 MPa, heat seal strength (sealing temperature 120°) 80 g/15 mm, impact strength 31 KJ/m, and haze 1.5%.

L9 ANSWER 95 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:484117 CAPLUS  
DN 133:105972

TI Amorphous  $\alpha$ -olefin copolymer compositions as resin modifiers, thermoplastic resin compositions, and packaging moldings  
IN Mori, Akiji; Morizono, Kenichi; Kaneko, Kazuyoshi  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000198887	A2	20000718	JP 1999-293121	19991015 <--
PRAI	JP 1998-304577	A	19981026		

OS MARPAT 133:105972

AB The copolymer compns. contain (A) 100 parts amorphous C3-20  $\alpha$ -olefin copolymers showing content of the  $\alpha$ -olefin  $\geq 20$  mol%, no melting peak on DSC, intrinsic viscosity (at 135°, in decalin) 0.01-10 dL/g, and mol. weight distribution  $\leq 4$  and (B) 0.001-5 parts nucleating agents. Thus, propylene and ethylene were polymerized in the presence of (i-Bu)<sub>3</sub>Al, [dimethyl(tert-butylamido)(tetramethyl- $\eta$ 5-cyclopentadienyl)silane]dichloridotitanium, and [Ph<sub>3</sub>C][B(C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>] to give an atactic copolymer showing  $[\eta]$  3.2 dL/g, T<sub>g</sub> -22°, ethylene content 16.0 mol%, and Mw/Mn 2.6. A composition comprising 70 parts Grand Polypro F 327BV and 30 parts composition comprising 100 parts of the copolymer and 1 part 1,3,2,4-di(p-methylbenzylidene)sorbitol showed elastic modulus 150 MPa, heat seal strength (sealing temperature 120°) 250 g/15 mm, impact strength 50 KJ/m, and haze 1.2%.

L9 ANSWER 96 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:470425 CAPLUS  
DN 133:74843

TI Soft transparent syndiotactic polypropylene compositions  
IN Morizono, Kenichi; Mori, Akiji; Okada, Keishi  
PA Mitsui Chemicals Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 19 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191853	A2	20000711	JP 1999-294562	19991015 <--
PRAI	JP 1998-300092	A	19981021		
AB	The title compns., with good scratch and heat resistance, comprise (a) 5-95% syndiotactic polypropylene and (b) 5-95% crystalline 50-99:1-50 (mol) propylene-C4-20 $\alpha$ -olefin copolymer (e.g., crystalline 1-butene-propylene copolymer) with melting heat peak of DSC >0.7 J/g, intrinsic viscosity (in decalin at 135°) 0.01-10 dL/g, polydispersity <4, and glass transition temperature <20°. A composition contained 90 parts 11:89 1-butene-propylene copolymer prepared using diphenylmethylenecyclopentadienylfluorenyl zirconium dichloride and Me aluminoxane catalysts and 10 parts syndiotactic polypropylene prepared using the same catalysts.				

L9 ANSWER 97 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:465660 CAPLUS  
 DN 133:43966  
 TI Composite catalyst for polymerization of olefin  
 IN Sun, Aiwu; Han, Shimin; Hu, Youliang  
 PA Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China  
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 11 pp.  
 CODEN: CNXXEV  
 DT Patent  
 LA Chinese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1230551	A	19991006	CN 1998-101239	19980401 <--
PRAI	CN 1998-101239		19980401		
OS	MARPAT 133:43966				
AB	The catalyst contains metallocene compound, and catalyst precursor on MgCl <sub>2</sub> . The metallocene compound has structure of CpIMR <sub>1</sub> R <sub>2</sub> R <sub>3</sub> , CpICpIIMR <sub>1</sub> R <sub>2</sub> , or CpIACpIIMR <sub>1</sub> R <sub>2</sub> , where, M is Ti, V, Zr, or Hf; CpI and CpII are monocyclic or polycyclic ligand with conjugated $\pi$ electron (such as cyclopentadienyl, substituted cyclopentadienyl, indenyl, etc.); R <sub>1</sub> , R <sub>2</sub> , and R <sub>3</sub> are H, halogen, alkyl, or alkoxy; A is chain bridging. The catalyst is prepared by allowing MgCl <sub>2</sub> carrier to react with Ti or V non-metallocene compound, treating with halogen ion exchanger in the presence of electron donor to obtain bimetal composite catalyst precursor, and mixing with metallocene compound of Ti, V, Zr, or Hf in toluene. The halogen ion exchanger is acyl halide, organic Al halide, halogenated silane, halogenated siloxane, H halide, or TiCl <sub>4</sub> . The electron donor is Et benzoate, diisobutyl phthalate, Et silicate, methyltrimethoxysilane, ethyltrimethoxysilane, ethyltriethoxysilane, methyltriethoxysilane, or phenyltriethoxysilane.				

L9 ANSWER 98 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:465055 CAPLUS  
 DN 133:90427  
 TI Flexible transparent heat-sealable propylene polymer compositions having excellent resistance to impact and blocking and their moldings  
 IN Mori, Akihi; Morizono, Kenichi; Okada, Keishi  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 31 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191862	A2	20000711	JP 1999-295113	19991018 <--
PRAI	JP 1998-298101	A	19981020		
OS	MARPAT 133:90427				
AB	Title compds. comprise (A) random copolymers containing propylene unit 90-99, ethylene unit 0.5-9, and C4-20 $\alpha$ -olefins 0-9.5 mol% with intrinsic viscosity in decalin at 135° 0.5-6 dL/g and (B) noncryst. copolymers containing $\geq$ 20 mol% C3-20 $\alpha$ -olefin units having no melt peaks measured by DSC, intrinsic viscosity in decalin at 135°				

0.01-10 dL/g, and Mw/Mn  $\leq 4$  by GPC, and glass transition temperature  $\leq 40^\circ$ . Ratios of A/B is 90/10-10/90. Thus, propylene and ethylene were polymerized in the presence of (iso-Bu)<sub>3</sub>Al, rac-dimethylsilylenebis(2-methyl-4-phenyl-1-indenyl)zirconium dichloride, and methylaluminoxane to give a polymer containing 4.7 mol% ethylene, with Mw/Mn 2.0, which (70 parts) was mixed with 30 parts noncryst. propylene-ethylene copolymer [prepared by using titanium[dimethyl(tert-butylamido)(tetramethyl- $\eta$ 5-cyclopentadienyl)silane] dichloride, (iso-Bu)<sub>3</sub>Al, and triphenylcarbenium tetra(pentafluorophenyl)borate] to give a composition showing tensile elasticity 110 MPa, heat seal strength 300 g/15 mm, film impact strength 80 kJ/m, and Haze 2.1%.

L9 ANSWER 99 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:465054 CAPLUS

DN 133:90231

TI Flexible transparent heat-sealable polypropylene compositions having excellent impact resistance

IN Mori, Akiji; Morizono, Kenichi; Okada, Keishi

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191861	A2	20000711	JP 1999-294960	19991018 <--
PRAI	JP 1998-297976	A	19981020		
OS	MARPAT 133:90231				

AB Title compds. comprise (A) random copolymers containing propylene unit 90-99, ethylene unit 0.5-9, and C<sub>4</sub>-20  $\alpha$ -olefins 0-9.5 mol% with intrinsic viscosity in decalin at 135° 0.5-6 dL/g and (B) copolymers containing 50-99 mol% syndiotactic propylene unit and 1-50 mol% ethylene unit with ratios of A/B is 90/10-10/90. Thus, propylene and ethylene were polymerized in the presence of (iso-Bu)<sub>3</sub>Al, rac-dimethylsilylenebis(2-methyl-4-phenyl-1-indenyl)zirconium dichloride, and methylaluminoxane to give a polymer containing 4.7 mol% ethylene, with Mw/Mn 2.0, which (70 parts) was mixed with 30 parts syndiotactic propylene-ethylene copolymer [prepared by using diphenylmethylenecyclopentadienylfluorenylzirconium dichloride, (iso-Bu)<sub>3</sub>Al, and triphenylcarbenium tetra(pentafluorophenyl)borate] to give a composition showing tensile elasticity 130 MPa, heat seal strength 200 g/15 mm, film impact strength 64 kJ/m, and Haze 2.1%.

L9 ANSWER 100 OF 829 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2000:465053 CAPLUS

DN 133:90230

TI Flexible transparent syndiotactic polypropylene compositions

IN Morizono, Kenichi; Mori, Akiji; Okada, Keishi

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000191856	A2	20000711	JP 1999-294565	19991015 <--
PRAI	JP 1998-300131	A	19981021		
OS	MARPAT 133:90230				

AB Title compds. comprise (A) syndiotactic polypropylene and (B) ethylene- $\alpha$ -olefin copolymers (containing 50-99 mol% ethylene unit and 1-50 mol% C<sub>4</sub>-7  $\alpha$ -olefin units) having intrinsic viscosity in decalin at 135° 0.01-10 dL/g and Mw/Mn by GPC  $\leq 4$ . Ratios of A/B is 95/5-10/90. Thus, 1-butene and ethylene were polymerized in the presence of (iso-Bu)<sub>3</sub>Al, rac-dimethylsilylenebis(2-methyl-4-phenyl-1-indenyl)zirconium dichloride, and methylaluminoxane to give a polymer containing 65 mol% ethylene with Mw/Mn 2.6, which (20 parts) was mixed with 80 parts syndiotactic polypropylene (prepared by using diphenylmethylenecyclopentadienylfluorenylzirconium dichloride and methylaluminoxanes) to give a composition

showing tensile elasticity 230 MPa, martensite hardness 12.1 1/mm, and Haze 22.7%.